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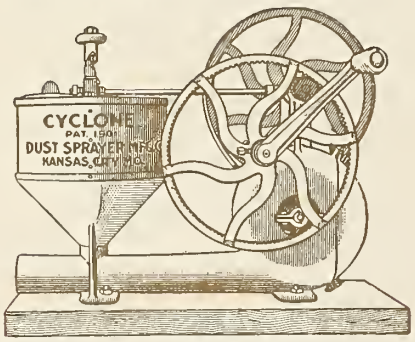

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BETTER FRUIT

A MONTHLY ILLUSTRATED MAGAZINE PUBLISHED IN THE INTEREST OF UP-TO-DATE AND PROGRESSIVE FRUIT GROWING AND MARKETING

WALNUT GROWING: A NEW OREGON INDUSTRY

C. I. Lewis, State Horticulturist, Tells of a Splendid Future for this Youngest Industry of the Great Oregon Country

THE English walnut (Juglans regia) has been grown for centuries in western Asia, especially Persia, whence it has been introduced by invaders and traders to various parts of Europe, namely, Italy, Spain, France, Germany and England; and it is, moreover, variously named, after all these countries. From Europe it was introduced into America and for over a hundred years walnuts have been grown in different parts of New York State, and farther south; but the large planting has been in California. There the industry was introduced by the Spanish friars, who brought with them the Spanish strain, which is a soft - shelled type, such as the Soft Shell and the Santa Barbara. Walnuts have been introduced into South America also. In later years the French strains of such varieties as the Franquette and Mayette have made their appearance, and the introduction of these bids fair to revolutionize the walnut industry in America. Not only will they be grown here in Oregon, but the chances are the French nuts will in the near future be the chief nuts grown in California itself. They are the hardier nuts and come from climates much like our own.

Plate One—View on Estate of Mr. Thomas Prince of Dundee. A Field of Forty Thousand Seedling Walnuts from Imported Nuts Planted Last April; Photograph Taken in October

Present Condition of Walnut Culture in Oregon

Scattered all up and down Western Oregon we find the English walnut growing, in plantings ranging from isolated trees up to those of one hundred acres. The majority of these trees are in bearing and go to prove that we have conditions here suitable for growing the walnut. While many of the trees over the state never bear, or produce only inferior nuts, there seems to be ready explanation for their failure. The barren trees are either the California type, principally Santa Barbara, or they are trees grown from nuts picked up at stores. The climate here is such that almost invariably the frost catches these trees, at times even injuring the tree itself. In sheltered places the Santa Barbara occasionally bears. The trees bearing inferior nuts are chiefly seedlings which were not chosen with care. We also find in places quite old trees that have made little or no growth, and investigation shows soil conditions to be such that only failure might be expected. Thus we see that we must choose our trees with care and have soil of the right condition. With this care, orchards up to fourteen years of age are doing nicely. However, we have no old orchards. Our old trees are principally isolated trees and perhaps they are not a fair index of what a whole orchard at their age would do.

As regards young trees we find, for instance, that Mr. Thomas Prince has three hundred and fifty trees planted in 1897, and two thousand trees planted in 1898. Last year he harvested between two and three tons of nuts and this year between four and five tons. Dr. Finck of Dallas has a tree now thirteen years old which two years ago bore seventy pounds of nuts. Mr. C. H. Samson of Grants Pass has two hundred and fifty trees nine years old that began bearing at seven years. Mr. Tiffany of Salem has a tree fourteen years old which last season produced one hundred and fifteen pounds of nuts. Mr. E. Britt of Jacksonville has a tree that has never failed a crop for twenty years. In addition to these there is quite a large acreage of young trees. In the neighborhood of Mr. Prince's orchard at Dundee we find about three hundred acres. Mr. Ferd Groner of Hillsboro has eighty acres. At Jefferson, Shedd, Jacksonville, Ashland, Merlin and Grants Pass are quite large plantations. From the crops taken from isolated trees at twenty years and over we might assume that the orchards at that age will be heavy bearers. However, we have not as yet the proof. While I myself have such faith in the future of the walnut in Oregon that I would feel willing to set out a walnut orchard, I would not want to give such advice as to lead anyone to stake his all in walnuts. Let us be conservative and plant in moderate quantities, and the near future will demonstrate without a doubt what the walnut will do. The future seems very rosy but until the time comes when our young orchards have reached an age of about twenty years and have shown that they are heavy bearers, we have not the right to proclaim that the walnut in Oregon is a decided success.

Propagation by Planting Nuts, Seedlings or Grafted Trees

At present among walnut growers there is more or less controversy as to whether we shall plant nuts, seedlings or grafted trees. Some maintain that only by planting seed in the place where the tree is desired can good results be realized; but broad investigations over the state do not year this out. True it is that in situations that are not very favorable to the walnut a seed will establish itself sooner than the transplanted tree; but such conditions should not be accepted for the walnut. Ordinarily, where the seed has been planted, it does seem to make a better growth for four or five years, but after that no appre-

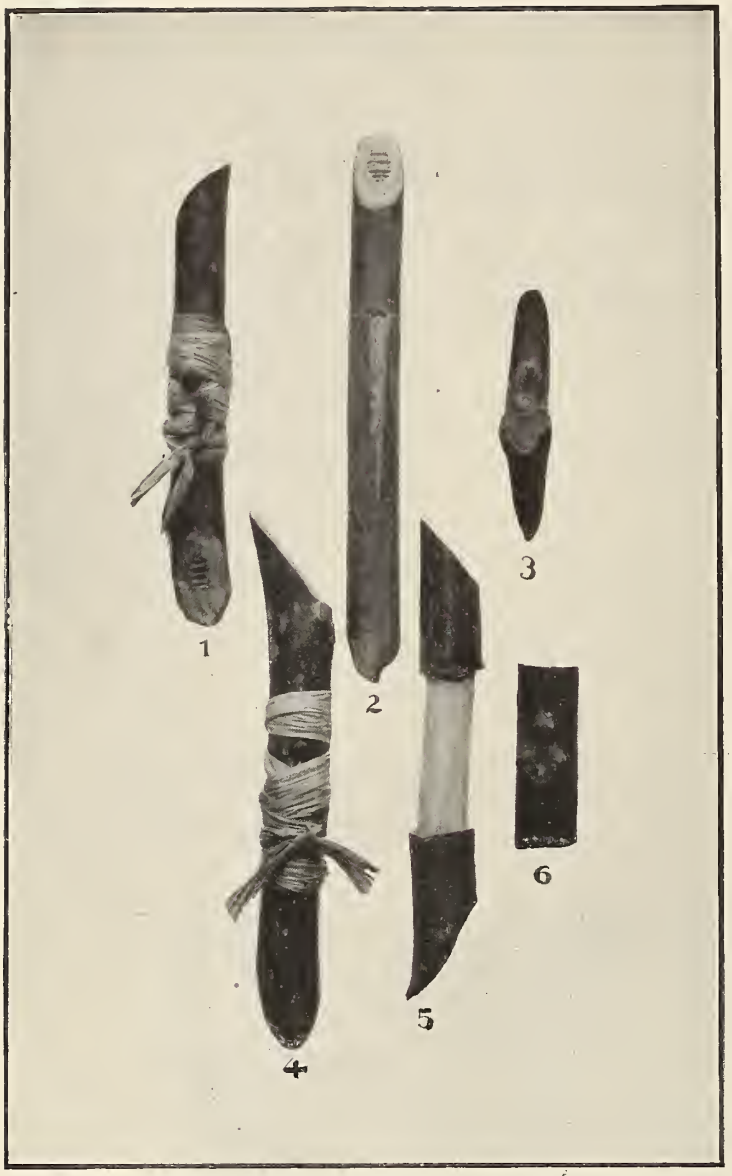

Plate Two—1-3, Shield Budding; 4-6, Flute Budding

ciable difference is noted. If seed is planted, great care must be used in its choice. We hear a great deal about generation, and the term has to the average person more or less of a mystical association. It may mean something and it may not. We have been told that the walnut is different from other trees in regard to the laws of heredity; but a careful examination does not prove this to be so. Now, original trees and their grafts are known as first generation trees, and nuts from these trees are called first generation nuts. These produce second generation trees, and their nuts are called second generation nuts. These nuts would produce third generation trees, and so on. We are told to plant only first generation nuts and it is held that the trees from these will bear larger and better nuts than first generation trees bear, but that after this the nuts rapidly grow smaller. The author holds that first generation nuts may be good and that they may not. In order for these to be valuable they must be procured under the following conditions: They must come from a grafted tree, or from a grafted orchard of one variety, which is isolated. Otherwise we can have practically no assurance that we can have trees that will bear good nuts. Even if the orchard is isolated, we cannot be sure that all the trees will produce good nuts. While in many cases the nuts produced are larger than those from the original grafted trees, on the other hand they are sometimes small and inferior. Accidental cross pollination and better or poorer growing conditions will play their part. As regards all this theory about walnuts and generation, it simplifies itself down to about this—the walnut is bi-sexual and self-fertile. An orchard, therefore, that is isolated, and of only one variety, will have little chance, of course, to become pollinated from other varieties. The result will be that a large percentage of its nuts will be fairly true to type; but we must expect more or less variance. A visit to the orchard of Mr. Prince will confirm this. We find there hardly any two trees of the same variety that are exactly alike either in tree characteristics or in nut characteristics, altho the parentage can be easily traced. Nuts from such an orchard as Mr. Prince has, containing a great number of varieties, would make poor seed, for the reason that they would cross, and the following generation would be a grand mixture, from which would doubtless come a great many inferior trees, as well as some trees with about the same characteristics as his varieties possess (such as Franquette, Mayette, Parisienne, etc.), and a few better in certain characters, probably, than the parents. Indeed, this has actually come to pass. Mr. Prince himself has a seedling of exceedingly promising characters, while another such seedling has occurred at Salem, from the Franquette. As we proceed with other generations the tendency to vary would be greater and greater. The walnut, then, follows the general rule of plant life. This does not mean that good results cannot be obtained from seedlings from grafted trees, provided the said grafted trees were isolated, because the chances are that the planter would have enough good trees —say, five or seven to the acre—from whatever he plants to meet all requirements, thus making allowance that some of the trees will bear inferior nuts and that some of them will bloom so late as not to have time to mature. But one can afford to sacrifice these. Again, these seedling trees are much easier to procure at the present time than the grafted trees. But if seedlings are being handled they should be taken from such an orchard as above mentioned, or else imported French seedlings of good character should be purchased. Otherwise, plant imported French nuts or nuts from an isolated grafted tree or orchard. Under no conditions plant nuts picked up from a store. Caution should be exercised in purchasing nuts from local trees that are called by the names of certain varieties. Plate 18 shows a nut that I found in Salem being sold as Mayette, which had practically no Mayette characteristics.

Another class of trees that could be planted is the grafted trees. These are hard to procure and are expensive, but undoubtedly if we are to put the walnut industry where it belongs, we must learn to graft with more success. Each walnut tree has its individual characteristics and we should choose with great care the scions from those trees which have the commercial characteristics as regards nut, and which are vigorous and prolific. An orchard of such trees would have many times the value of the average seedling orchard. The nuts would be of the same type and size and would be able to demand better prices.

Methods of Grafting the Walnut

Trees are grafted on their own stock (Juglans regia), or the California Black (J. Californica), and on the American Black (J. Nigra). We also have several methods of budding and grafting, but none of the methods has so far brought a

Plate Three—1, English Walnut; 2, American Black Walnut

large percentage of good grafts. Occasionally we hear of men who claim that they can graft over 90%, but further investigation generally shows that such is not the case. Of the American grafters, Mr. Geo. Payne of California is about the most successful of whom I have heard.

When trees are grafted on their own stock they make rather slow growth and for this reason the method has not met with much favor. When grown on California Black walnut stock they make a rapid growth and seem to come into bearing sooner, and will, it is claimed, grow in heavier soil. On American Black walnut they make rather slow growth. Mr. Prince of Dundee thinks that a good deal of the failure in grafting has been due to the fact that too soft wood has been used, and that where two-year-old wood has been used better success will be met with, as the one-year-old wood is soft and tends to be pithy. Doubtless he is right. On the other hand, Mr. Payne of California, I believe, uses the yearling wood, grafting either the two-year-old or the four-year-old tree. The three-year-old tree is too large at the collar to be easily grafted and too small to be top-worked easily. The two-year-old tree can be easily root-grafted or collar-grafted, and the four-year-old can be easily top-worked.

As regards the kind of wood to use, it will probably depend largely upon the system of budding or grafting employed, as we should as nearly as possible have stock and scion or bud of nearly the same condition. The French are having considerable success grafting in the southern part of France, and in northern Italy, while in northern France little success is being met with except in the greenhouses. Mr. Gillet, of Nevada City, California, states that the common mode of shield budding as employed on fruit trees fails with small walnuts, say three years from the seed, and rarely succeeds on the larger stocks. When used on the latter he advises removing the wood from the inner side of the strip of the bark on which the bud is set, making

Plate Five—Cleft Grafting. Two Cuts Through the Sap Wood When Larger Stocks Are Used Is to be Preferred.

Plate Four—A Typical Three Year Old Tree in the Prince Orchard. Notice Laterals are not Allowed to Grow, Thus Inducing Strong Terminal Growth

this strip at least two inches long and as broad as possible; but even under these conditions he has had very little success. Flute budding has been used as much as any form. This was recommended for nuts by Mr. J. L. Budd, of the Iowa station, and the method is shown in Plate 2. Grafting by this method is generally done in summer, about June, when the bark slips easily. Choose scions from one-fourth to three-fourths of an inch in diameter, removing a ring of bark one and one-half to two inches long. This should have a good strong bud. Cut off a limb of the stock, leaving a stub from which a smaller ring of bark is removed. Carefully split the ring from the scion and apply it to the stock, taking care that it neatly fits the remaining bark or stub and that the split edges unite. The parts should be nicely united and not bruised. Cover the whole with a paper sack, being careful to see that it is tied below the wound. This method has been more or less successful in top-working. For use in small trees in the nursery or for top-working small branches on large trees, a modification of this form, known as ring or annual budding, is often used. In this case the top of the stock is not removed until after the bud has grown fast. Crown grafting is the most successful method used with young trees and can be successfully done with either whip, cleft or sap. Any seedling not greater than four inches is chosen. Before grafting, remove the earth for several inches around the base of the tree, and then smoothly cut off the base several inches below the ground line. The graft is then bound with wax, cloth or the tying materials, and then earth banked up to the top of the scion. Sometimes cleft grafting is used, such as is shown in Plate 4; but this rarely meets with success when carried out by the method illustrated. When cuts are made through the sap wood instead of through the heart wood, more or less success can be expected. Another method of top-grafting is the prong grafting or budding. This is much like shield budding, with the exception that a prong instead of a bud is

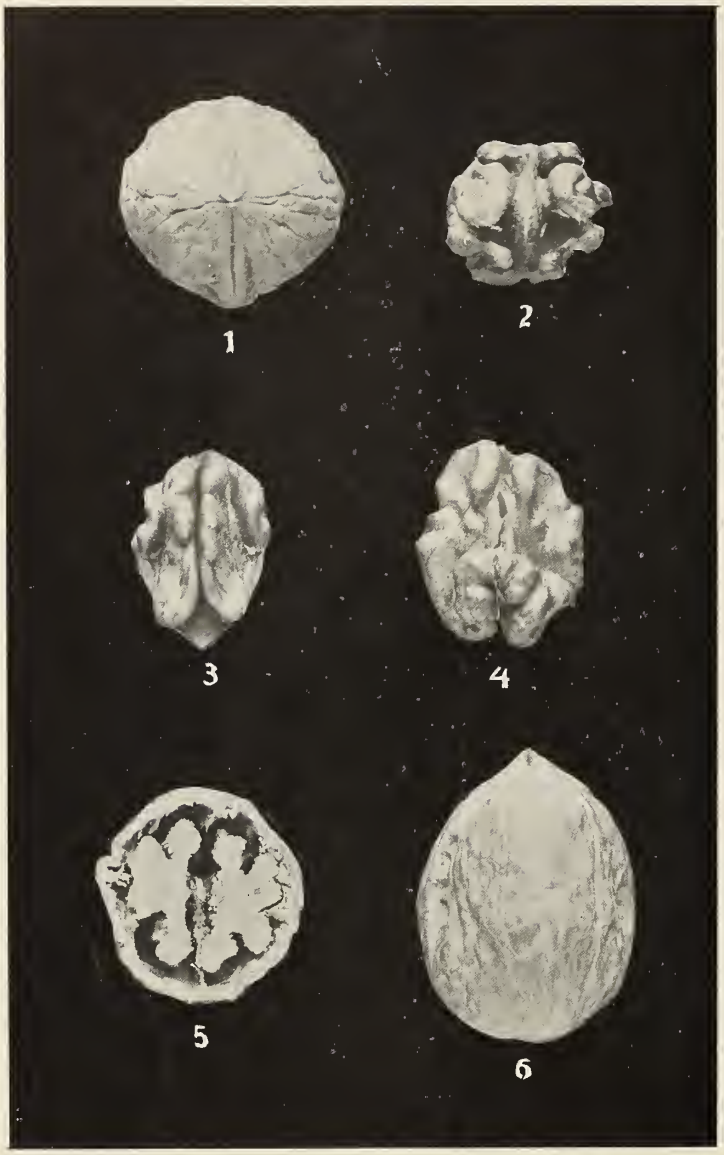

Plate Six—The Franquette. Natural Size

used. There are, of course, many other methods of budding and grafting that might be used but they have no particular advantage.

Where seed is planted, several methods can be used. Good success was obtained by Mr. Prince by planting nuts at various times from the first of February to the middle of April, in good rich, but loose soil, planting the seeds on their side at a depth of two and one-half inches. It might possibly be better to plant them a little deeper than this (see Plate 1). It is also noted that the later plantings—about April—seem to give better results. Others recommend that the seeds be planted in boxes and sprouted first and then planted in nursery rows four feet apart and one foot apart in the row.

Site for a Walnut Grove

It is sometimes stated that the walnut will grow on almost any soil. This statement is not true. There is no tree that demands as much care as the walnut in the selection of the soil, especially when grown on English walnut roots. It is claimed, and reasonably, that, when grafted on either American Black or California Black, the tree will stand heavier soil. The walnut is a heavy feeder and the soils that suit it best are the good, deep, rich, moist loams, at least fifteen feet deep and well drained, altho these are not necessarily the only soils upon which it will grow. Mr. Prince of Dundee is getting splendid results on his red hill land, which is the typical red soil, but is deep This perhaps will not produce as rapidly growing trees as similar land a trifle heavier, such as we find, for instance, in and around Salem. The soils to be avoided are those which are underlaid near the surface by hardpan, and those underlaid near the surface with rock, cement gravel or loose gravel. In the former the tap root will grow for a short time but cannot penerate the hardpan, and the tree will cease growing. The latter soils should never be selected—they are too light and thin. Much of our valley land is too heavy and poorly drained. Probably the best site as regards soil will be found in the rolling land such as found in large quantities in the Willamette Valley counties. On the rolling lands we will get better drainage of soil and also the chances are better for good circulation of air around the trees to keep them in good health and at times avoid frost. The preparation of the ground should be about the same as for a fruit orchard—good deep plowing and thorough harrowing will bring their rewards. We find fine illustrations of this in visiting Mr. Prince's orchard, where every precaution was taken in preparing the ground and handling young trees, while in that vicinity are several neighbors who did not take these precautions. Today Mr. Prince has handsome trees, while some of the neighbors mowed down their trees with a mowing machine.

Planting the Tree

It was formerly thought that it was disastrous to the walnut to break or cut the tap root, but it has been found that it causes no injury to cut off the tap root in planting, as this action generally induces new tap roots to appear and also produces a better, healthier root growth. In all cases remove the tap root with a sharp instrument, making a clean cut. The tree should then be carefully set, taking care, as with a fruit orchard, to have the tree thoroughly lined and firmly set. As regards distance to plant, great errors have been made, and we shall probably have to go through with the walnut exactly what we have done with the apple. Many walnut growers were let to believe that it was to their advantage to plant trees from twenty to thirty feet apart, and later to remove some of these trees, realizing a fortune from the lumber. These persons will generally be doomed to disappointment because such walnut wood is not of good quality. Where the trees grow in the forest they make straight smooth trees. Out in the open we find that they make strong lateral growth, and such trees do not make good timber. Mr. Prince has his trees thirty-six feet apart and some of the trees are now nearly touching. The author would recommend the proper distance to be from fifty to sixty feet apart. Under some conditions he might plant the trees thirty feet apart and later take out every other tree. Eventually

Plate Seven—This Tree Is Headed Too Low, Succeeding Crops Will Bring the Lower Branches to the Ground

five to seven trees to the acre would be sufficient, and the yield from these would be from three hundred to a thousand pounds, which, at present prices, would bring handsome profits. In some cases it might be profitable to plant these trees as Mr. Prince has done, putting them out in his prune orchard, and later, as the trees begin to crowd, removing the prunes. Just what trees should be removed would depend, of course, upon how close they were planted; but aim so as to have at least fifty feet between the trees permanently. To be convinced that the walnut responds to tillage and cultivation, one needs only to visit those orchards in which such care has been given, and then notice trees of the same age that have been set out and neglected. The walnut is a rapid grower and a heavy feeder and should receive the same intensive culture that is given to our fruit trees. The soil should be plowed or disked in the spring, and as soon as it is possible to get on the soil after the rains of winter without danger of puddling, it should be cultivated to a depth of two or three inches with some kind of cultivator or harrow. The underlying principle of this is simply to conserve the moisture. The moisture can be made to come up through the trees and be given off through the leaves and not allowed to escape into the air from the soil. Take a pan of water and place some glass tubes in it. You will find that the water rises in the tubes higher than it stands in the pan. Little particles of soil form just such tubes, which, reaching to the water table, cause the water to rise. By shallow cultivation we break off the tops of these tubes and do not allow the water to escape up through the ground. The function of water is principally to dissolve the plant food so that it can enter the roots and be taken to the leaf, where it is manufactured into building material, and the water is sent off into the air. Tillage should be carried on thoroughly during the summer months up to about the first of August, when probably in most cases the weeds can be allowed to grow. In most cases vetch can be sowed

Plate Eight—A Well Formed Tree in Prince Orchard. Note that the Lower Branches Are Started High and Trained Upward

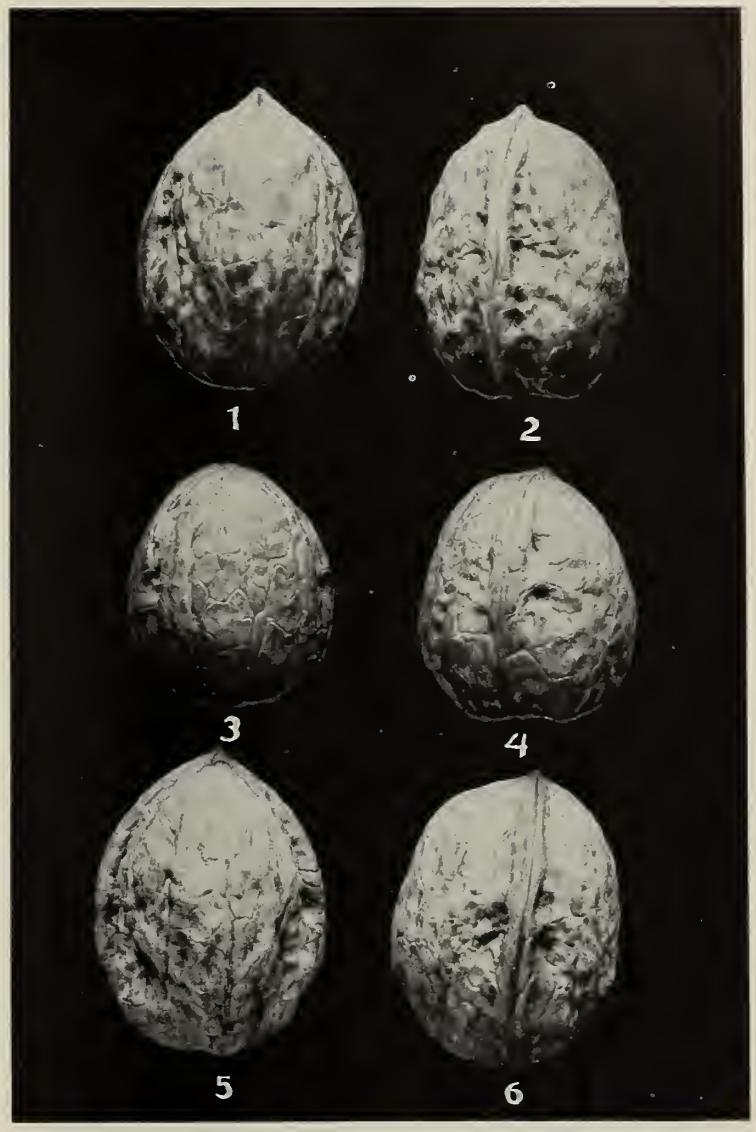

Plate Nine—1-2 Oregon Franquette. 3-4 Imported Franquette. 5-6 Seedling Found at Salem, Probably From Franquette. Natural Size

at this time. This will be plowed under in the spring, never being allowed to reach a height greater than two feet, if possible. This vetch adds a great deal of plant food, namely, nitrogen. It also produces humus, or decaying vegetable material, which helps the soil to hold more moisture, and which is of value in placing the soil in a better physical condition. If you break open a large lump of soil, you will generally find that it will fall apart along certain lines, and these lines are little fibres of vegetable material. A good supply of decaying plants on the ground will cause the soil to break up easily. It may be that in some cases, where the vetch is put in every fall, we shall get too strong a growth of tree. When this takes place, sow some such crop as rye, which will produce the humus and mechanical effects without adding much to the plant food. On some of the steep rolling land where there is great danger of loss from washing of the soil, it might be advisable simply to stir a small area around each tree, leaving the greater part of the soil in sod, and from time to time mowing the grass, allowing it to remain on the ground; but never remove it. Otherwise we cannot save the moisture in our long, dry summer. It would probably also be necessary to add extra straw to spread on the sod to conserve the moisture. We have yet to experiment to determine the value of this practice. While, in some conditions, it works well with apple orchards, we have yet to demonstrate its utility in our climate. But we do know that with good tillage plus the use of cover crops we obtain splendid results. Clear tillage alone in time destroys the humus. The methods to employ will in time demonstrate their true value and we shall probably find that local conditions will be the factors that will determine method.

Pruning the Walnut Tree

The walnut will require little or no pruning. Care should be taken the first four or five years to keep nearly all laterals removed. This will cause the tree to make a rapid terminal growth, and when the laterals do begin to grow they will not come down close to the

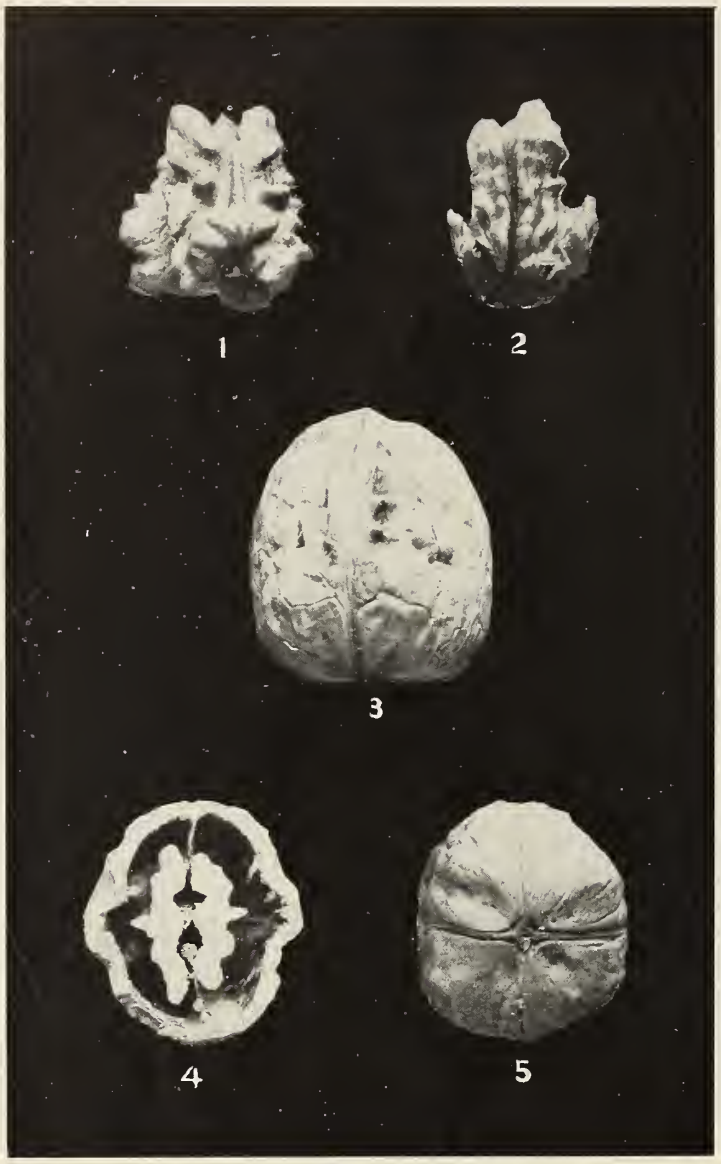

Plate Ten—The Mayette. Natural Size

ground as is the case with the young trees where the laterals are allowed to remain (Plates 7 and 8), necessitating the cutting off of quite large limbs. This keeping the laterals off also, of course, gives a much larger tree, as the growth that would naturally go into the laterals is forced into the terminal growth, the young tree sometimes making seven or eight feet of growth in one season. The young trees should always be staked and tied with broad strips of cloth to prevent cutting. Plate 4 shows a three-year-old tree properly treated. From time to time dead wood will need to be removed from the tree and occasionally a few limbs taken out to guard against having the tree grow too thick; but care should be taken not to remove large limbs. When this is done be sure to make a slanting cut so as to shed the water, and then wax it to keep it dry, as exposed pith will rapidly decay. It has been the practice in some places, in harvesting the nuts, to handle the trees more or less roughly, it being claimed that the breaking of certain terminals forces out a lateral bud growth; and it may be that in some cases where the trees do not tend to be very fruitful the heading in of some of the terminals may be beneficial. We still need to do more or less experimenting along this line, but the walnut grower will find that his trees do not all begin fruiting at the same age. Here in Oregon the average is from four to ten years, but some trees that are considered to be barren at ten years old, later come into bearing. The yield of nuts the first year is very light—probably four or five nuts to the tree. The second year, two to five pounds; and trees from fifteen to twenty years old yield as high as three bushels on the average, while old trees yield from fifteen to twenty bushels. The walnut, if given proper treatment, will live to a ripe old age, as we know of trees in parts of Europe that are three hundred years old; but some California trees have been removed when they were thirty years of age, it being claimed that they had outlived their usefulness. This was probably due, in every case, to too close planting. When proper distances are allowed and the air circulates freely in among the trees, they live naturally for centuries, and this is one of the most attractive features of the walnut industry. In establishing orchards we are laying the foundations for prosperity for a great many generations.

Harvesting the Crop

The nuts are not harvested until fully ripe and the husks begin to split open. Light shaking of the trees will then cause most of the mature nuts to drop. As the walnut does not ripen uniformly, it will be necessary to gather the fruit at intervals for several weeks. In some countries it is the practice to beat the fruit off from the tree, but the California growers believe that this is more of an injury than a help as it often seems to knock off a great many buds. With care, however, a long, light bamboo pole may be of some service. When the nuts are gathered, the husks should be removed and the nuts washed and rinsed, for, if the hulls are allowed to remain on the nuts, they will cause a staining, thus depreciating the market value of the nuts. Where only a few nuts are grown, probably the husks can be removed by hand; but where nuts are grown on quite a large scale it may be necessary to make some kind of barrel or drum in which the nuts can be churned. One of these can be easily made by taking a common water barrel and making an opening on the side through which the nuts can be put in, and then revolving the barrel on some form of axis. In some cases it is the practice to add a little sand, and in France it is sometimes customary to give them a soapstone polish, which makes the shells very smooth and gives them somewhat of a greasy feeling.

After the nuts are washed they must be cured. This curing is a matter that requires a good deal of care. The nuts are generally placed on platforms or trays—prune trays will serve admirably. (See Plate 12.) They are then allowed to remain out in the sun until properly cured, which will take about three days. It will be a good plan to stir the nuts several times each day, and, where they are left out at night, to have some kind of covering of canvas to throw over them

Plate Eleven—General View in Prince Orchard, Fine Form of Trees at Eight Years Old, But They Are Too Close

to keep away the dews. In some cases they are dried by artificial heat, being placed in a temperature of at least one hundred degrees Fahrenheit for a number of hours, depending, of course, upon the degree of heat. After the nuts are cured they should be placed in a rather cool, dry atmosphere, where they can be kept until shipped. If not cured and kept in good condition the nuts will become rancid and be unsaleable. It is the practice in some parts of California, and also abroad, to bleach the nuts by means of sulphur. This practice, while whitening the shell, causes the quality of the nuts to deteriorate. If insisted upon by dealers, this may have to be done, but growers should try to discourage the practice. Some time ago the California Agricultural Experiment Station suggested the following treatment: "The nuts, placed in small baskets such as the Chinese use for carrying, are dipped for about five minutes in a solution containing to every fifty gallons of water six pounds of bleaching powder and twelve pounds of sal soda. They are then rinsed with a hose and, after draining, again dipped into another solution containing one per cent bi-sulphide of lime. After the nuts have assumed the desired tint they are again rinsed with water and then dried. Instead of the second dipping, the nuts may be sulphured (fumigated) for ten or fifteen minutes. The cost of fifty gallons of chlorine dip will be about forty cents; the same bulk of the bi-sulphide dip, probably considerably less. The time occupied in handling one batch, two dips, is from twelve to fifteen minutes."

Marketing the Nuts

The walnut is generally marketed in sacks. These hold from one hundred to one hundred and twenty pounds. The more progressive growers screen the nuts, assorting the different sizes, as the prices range more or less according to size. The Chaberte nuts, however, and some soft-shelled types, cannot be sacked, as the shell is too thin to warrant rough handling. These nuts are crated. With the reputation that we have established in the packing of fruit, we have a standard, in a way, to follow in handling the walnut. In other words, there will probably be a market for the better grade of nut handled in attractive packages. As the tendency is for small gift packages of fruit, so it will be with the walnut, and attractive packing and packages will undoubtedly bring splendid returns. In the countries where the walnuts are being grown in large quantities, quite a number are being picked green for pickling and catsup manufacturing. There is also quite a demand for walnuts for manufacturing oil and probably some inferior nuts could be used in this way to advantage. One hundred pounds of nuts will manufacture about eighteen pounds of oil. The French use this oil in manufacturing "olive oil."

Varieties Adapted to Oregon

The question of variety is one every grower must solve. At the present time there is practically only one point on which all growers unite in regard to varieties for Oregon, and that is, they must be the late-blooming kinds, known as the French varieties, such as Mayette, Franquette, etc. (See front cover.) Each nut has its champions, but the two varieties named are the general favorites. Time alone will settle the supremacy of any variety or varieties over others; but it is only reasonable to suppose that the walnut, like the apple, will demonstrate that each variety is adapted to certain conditions, and fills a valuable place either commercially or as a home nut. Already certain characteristics are being associated with each variety—thus, the Proepurturien bears while very young and the nut is of fine quality, being an excellent home nut. The Chaberte seems adapted to high altitudes and poor soils, and the kernels separate easily. The Franquette is noted for its good size and prolificness; the Mayette, for extra good quality; and so on down the list. These nuts also have their weak points, which will be brought out in descriptions following. Not only do I expect

Plate Thirteen—1-2 Oregon Mayette. 3-4 Imported Mayette. 5-6 Nuts Sold as Mayette, But Which Are Not. Natural Size

to see each variety establish itself in some one of our varied conditions, but I also look for more varieties — for seedlings superior to anything we now have. Already we see such signs in the seedlings shown in Plate 17, which were found in the orchard of Mr. Prince, and which have some excellent characters. The nut shown in Plate 9, Figure 5, is a seedling, evidently of the Franquette, found at Salem. It is large, of fine appearance, but the shell is a little thick. Again, we can improve the varieties we already have by selection. They already show improvement over the foreign nuts in both size and flavor. Our nuts are now being sought for by the fancy grocers, being considered the best nuts on the market. Let us give these varieties a fair show, and time will demonstrate their value.

Franquette—Originated by M. Franquette in the early half of the last century; a large nut, rather oblong, being pointed at apex and slightly flattened at the base. The valves formed by the joining of the two halves of the shell are very pronounced, bulging out to the extent that the nut can be lifted by the appendage. Passing from apex to base are suture lines, giving the nut a more or less ribbed appearance. The veining on the shell is not very pronounced. Shell, medium to thin, not being as thick as that of either Mayette or Parisienne, but being at the same time well sealed and thick enough to ship well. The inner partition shell separating cotyledons is thin and separates

Plate Twelve—Nuts Curing in the Sun

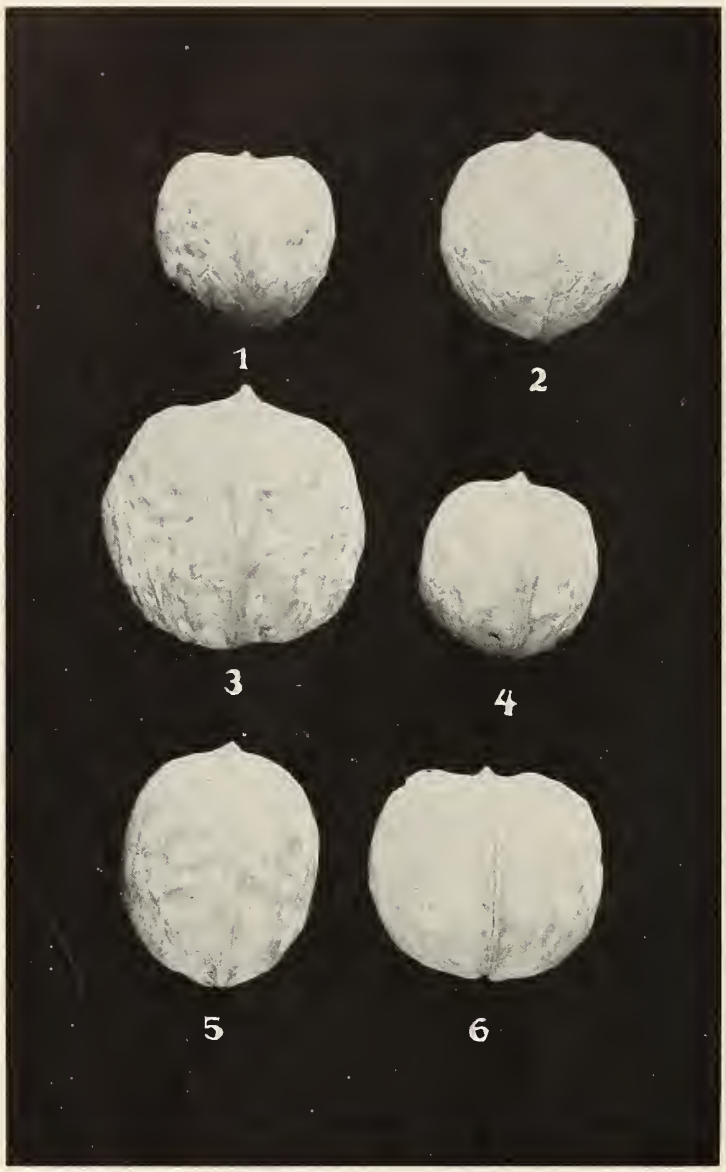

Plate Fourteen—Six Nuts Taken From One Pound of Nuts as Purchased at Grocery. Natural Size

easily from the kernel. The kernel is plump, filling the shell and fitting rather closely along the valve lines, thus not allowing as easy separation of meat from shell as with either the Mayette or Parisienne. The pellicle is pale yellow and glossy and is pronouncedly veined. The convolutions are quite large and coarse. The quality is excellent, having a rich, nutty flavor. The Franquette seems to show a tendency to be uniform in size and shape. It is a late bloomer, very hardy and prolific, and thus far has shown a tendency to be free from diseases. (See Plate 6.)

Mayette—An old, standard French variety that has been in cultivation for a long time. It is the Grenoble nut of commerce, and comprises fully half of the French crop. It is often spoken of as a medium to small nut, but this, I think, is due to the fact that we have, to my knowledge, no isolated grafted orchard here on the coast from which we can select seed, and much of the seed obtained abroad has been inferior. Again, we sometimes find nuts sold as Mayette which are not. Plate 13, Figure 5, shows a nut sold in Salem as Mayette, but which is not. The true Mayette is above medium, to large, in size. In fact, some of the largest nuts I have collected in Oregon are Mayettes. In form it is not so oblong as Franquette, but slightly broader, and flatter at the base and more blunt at the apex. It is not ribbed so pronouncedly, but the veins are more prominent. Very deep pits occur in the region of the valve, which is less pronounced than with Franquette. The shell is somewhat thicker, the kernel large and plump, separating very easily from the shell and from the cotyledon partitions. The pellicle is dull and of a light brown color. The convolutions are not so large as with Franquette but are more numerous and more sharply pointed, while the veining is less pronounced. In quality, it is of the very best, being a dessert nut of the highest quality and bringing the highest price in the market. Fuller, in his description of this nut, states: "It is very large, with a light-colored shell of moderate thickness, kernel plump, readily extracted whole, sweet and rich nutty flavor. Tree blooms late and is very productive. An old and standard French variety." At the present time we have very few genuine Mayette trees in bearing in our state. (Plate 10.)

Parisienne—Named after the city of Paris, but was originated in southern France and is now quite extensively grown in that country, and, with Mayette and Franquette, forms the bulk of the crop. It is a large nut of about the same size and proportions as Mayette, but is more truncated at apex and does not bulge out as much in the center. It is sometimes slightly ribbed, and the pits, while numerous, are shallow. The valves are not pronounced. The kernel separates very easily from the shell. The pellicle is very light—from a straw color to nearly white. The convolutions are much as in Franquette and veins are quite pronounced. The kernel is smaller than that of either of the aforesaid nuts. In quality it is very good. Those who have seen this nut in the Prince orchard at Dundee are very much impressed with it, although Mr. Prince himself is as yet not sure that it can rank with Mayette and Franquette. These three nuts are promising from a commercial standpoint. (Plate 16.)

Chaberte—Named after its originator. A medium sized nut, very flat at the base, and at the apex pointed in much the same way as the Franquette. The shell is thin, often to such a degree that it will not stand shipping in sacks, but must be crated. The kernel is smaller than that of the three above described nuts, but of about the same color as that of Mayette. It separates very easily from the shell, and this fact, with the small size of the kernel, makes it a favorite with confectioners. In quality, the meat is rich flavored and oily. Because of the large percentage of oil, it often is grown for this purpose. It is the hardiest of our French varieties and has grown at an elevation of twenty-seven hundred feet. It will also thrive on poorer soil than most of the other varieties. (See front cover.)

Proepurturien—Named because of its precociousness. The nut ranges in size from medium to small. In form it

Plate Fifteen—A Diseased Tree. The Appearance of a Tree Attacked by Bacteriosis

FOR THE

Codling Moth

and ALL LEAF-EATING INSECTS SPRAY WITH

Swift's Arsenate of Lead

IT IS WHITE & IT STICKS

Ordinary Rains will not wash it off. No matter how strong it is used, there is absolutely no danger of burning or scorching.

After investigating results obtained with Swift's Arsenate of Lead in California and Colorado, a few Hood River growers decided to try it in 1905, and we used about 2000 pounds. Those who did had the cleanest crop they ever had with far less stung apples than their neighbors who used other formulas. In a word, the result was so satisfactory that every grower in Hood River Valley is using it this year. We used 2000 pounds in 1905 and a carload in 1906.

E. H. SHEPARD, Manager,
Hood River Apple Growers Union.

SEND FOR BOOKLET TO

WOODARD CLARKE & CO.

NORTHWESTERN AGENTS

PORTLAND, OREGON

For Sale in Hood River by the Hood River Apple Growers Association

is something like a small Franquette, without the pronounced valves. It is a vigorous dwarf variety, often bearing in the third year, but only the grafted trees keep these characteristics. The seedlings tend to revert to the larger, less precocious tree. In quality it is very fine and makes an excellent home nut. It is free from disease and is productive. Mr. Felix Gillet has introduced two improved strains, namely, the Large Pointed, and the Late, Proepurturien. Plate 17, Fig. 4.)

Meylan—A French variety that originated near the village of Meylan and is quite extensively grown in that region. This is a large nut, flatter and slightly broader than Mayette. The pits on the shell, however, are not so pronounced. Quite recently introduced into America by Felix Gillet. This nut can be seen growing in the orchard owned by Mr. Prince and is a very promising nut, being smooth and of fine form. It is somewhat lighter in color than most nuts.

Parry—Medium sized, being rather flat on the base. Very few are as yet grown in our state but it may prove to be of value.

Besides the English walnut we also have several other species that are useful chiefly as ornamentals or shade trees. The American Black (Juglans nigra), the California Black (Juglans Californica), one of the Japanese nuts (Juglans Sieboldiana), and Juglans Manchuria, are shown in Plate 18. There are also several cut-leaf and hybrid varieties that are ornamental and which may prove to be of value for stocks. (Plate 18.)

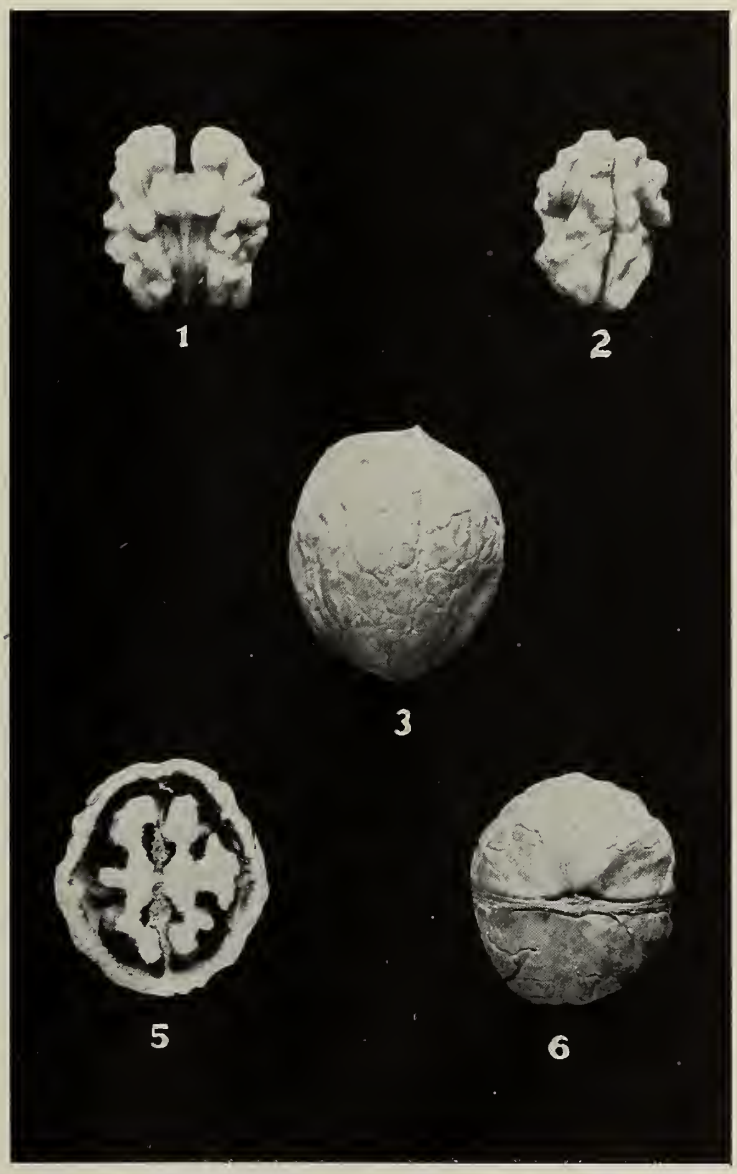

Plate Sixteen—Parisienne; Number 3 Slightly Undersized

Diseases and Insects

So far, in our climate, we have had few complaints of insects attacking the nuts or foliage. However, there are in some regions certain caterpillars that attack the foliage. These can be easily treated by spraying with some arsenic poison. The nut in commerce often seems to be wormy and attacked by weevils, a condition which can be overcome by by fumigating; but we have practically no destructive insects with us at present. We have one bacterial disease which is beginning to show itself and which is quite prominent in parts of California. It has attacked a few Oregon orchards in a light way. This is the Bacteriosis. (Plate 15.) The organisms of this disease winter over in diseased tissues of affected branches, and in fallen nuts. New infection will often occur in the spring, attacking young shoots, nuts and opening leaves. If shoots are tender, canker-like spots appear. Black spots form on the leaves, which become mis-shapen and fall off. If the nuts are attacked early in the season, they will drop; if later in the season, they become marked by sunken spots and will often remain on the tree until late in the fall. As yet but very few trees have been attacked in Oregon and the disease may never prove dangerous. In California, winter spraying with Bordeaux has proved beneficial. The disease seems to work more upon very rapidly growing trees; and therefore, if the disease appears in an orchard, it will be well not to try to force the trees too rapidly. Destroy all the diseased branches, fruit and leaves.

At times moss and lichens gather on the young trees and a winter spraying of Bordeaux or lime and sulphur will remove this. Occasionally nuts are sunburned. This is generally due to lack of moisture or a lack of thorough cultivation of the soil. In some cases nuts are

being sent to the station which are supposed to be diseased, having sunken black places on the hull. When examined, it is quite often found that these nuts are improperly pollinated.

The Walnut Market

Some persons have shown more or less alarm in regard to the walnut market, claiming that it would be very easy to overstock it. Now nuts are becoming more and more a staple of diet with the American people, due to several reasons —our increase in wealth, and the scarcity and increase in price of meat. The outlook now for beef is that it will tend to rise in price rather than to lower, and as our population increases the tendency will be for us to eat more and more fruit and nuts. The author of the bulletin can quite clearly remember when nuts were found on the table only at festive times; while at the present time the tendency is to have nuts nearly all the season through. This means a great demand, and the figures given by the government bear out this increase. In 1902 there were imported from Europe into the United States nearly twelve million pounds of walnuts, while in 1905 this figure had risen to over twenty million. These imported nuts are inferior to the nuts that we can grow. They are not graded as carefully. Plate 14 shows typical nuts taken from a pound of walnuts sold in one of our stores. Many of the nuts are not true to name, being a grand jumble of varieties. In California the production is increasing but slowly—less than four thousand tons in nine years; and it has been estimated that if it should double that amount in the next ten years, or, say, if the increase should be a thousand tons a year for the next twenty years, that would mean only forty million pounds, or less than one-half pound for every person in the United States. This means that the population of the country is increasing more rapidly than the combined ratio of imported and native nuts. Again, let us consider the prices that California has realized. We find upon investigation that the price has steadily advanced. In 1896, seven cents was paid; in 1903, twelve and one-half cents; in 1906, thirteen to twenty cents. Even at the lower figure an orchard in full bearing would yield good profits, considering the amount of labor necessary, as at least six hundreds pounds of nuts could be expected per acre. It has been estimated in California that even a yield of three hundred pounds an acre would be profitable.

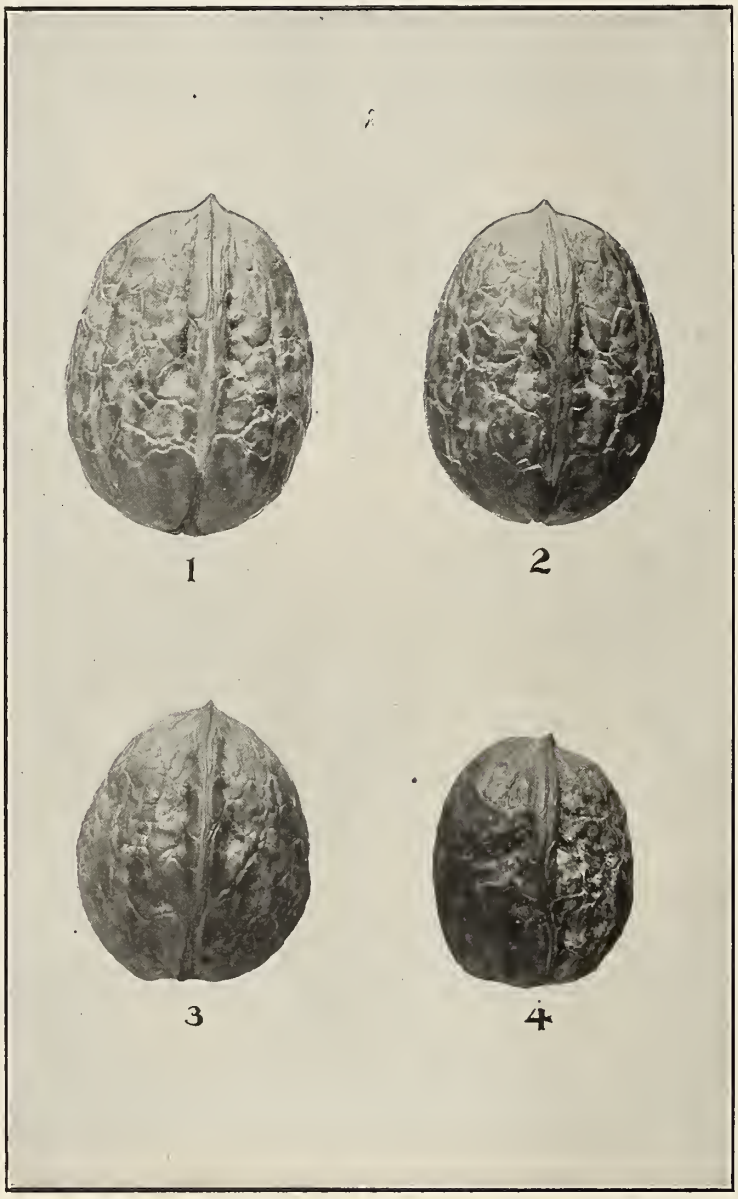

Plate Seventeen—1-2 Seedlings From the Orchard Owned by Mr. Prince 3 Seedling Grown by Mr. Britt. 4 Proepurturien. Natural Size

THE Superintendent of Public Instruction, J. H. Ackerman, recommends the introduction of an elementary course of agriculture in public schools. Mr. Ackerman undoubtedly knows the value of agriculture and horticulture to the citizens of the State of Oregon, and wishes to impart a knowledge of the same to children in the public schools.

THE fruitgrowers of the Willamette Valley, in fact, all over Oregon, have great difficulty this season in securing enough bluestone for their fall spraying. California seems to show the same shortage, and growers are figuring on a substitute for bluestone. Last year the growers paid 7c per pound; this year as high as 12c and 14c has been asked for it.

L. C. Smith & Bros.
Typewriter
(Writing in Sight)

L. & M. Alexander & Co.
Exclusive Dealers Entire Pacific Coast
170 Fifth Street, Portland, Oregon

Used and endorsed by:
Better Fruit Publishing Co.,
Hood River Fruit Growers Association,
Hood River Land Emporium,
all of Hood River Oregon.
East Hood River Fruit Growers Union,
Mosier, Oregon.
Ladd & Tilton and Merchants National Bank
Portland, Oregon.

Bargains in Traded Out Machines

London & Lancashire Fire Insurance Co.
OF LIVERPOOL, ENGLAND
Capital . $15,000,000
Surplus in U.S. 1,149,000
Net Reserve 7,500,000
This sterling English Company paid $6,732,269 losses in San Francisco

H. F. DAVIDSON, AGENT
HOOD RIVER, OREGON

ORIENT INSURANCE COMPANY
OF HARTFORD, CONN.
Cash Capital $500,000
Net Surplus $250,000
This Company paid $1,331,294 to its Policy Holders in San Francisco

E. A. FRANZ, AGENT
HOOD RIVER, OREGON

THE above payments at San Francisco are more than those of any other affiliated companies, with one exception, and the saving from claims as filed was only 7 per cent, which is far below the average

JAMES WYPER, *Manager Pacific Coast Branch*

SAM B. STOY
SPECIAL AGENT AND ADJUSTER
226 Chamber of Commerce, Portland, Oregon

WHOLESALE RETAIL

THE DALLES NURSERIES

R. H. WEBER, *Proprietor*

THE DALLES, OREGON

Grower and Dealer in FRUIT, SHADE AND ORNAMENTAL

TREES

GRAPE VINES & SMALL FRUITS
EVERGREENS, ROSES & SHRUBBERY

REMEMBER—OUR TREES ARE GROWN STRICTLY WITHOUT IRRIGATION

FRUIT FACTS

Chelan County won 35 gold medals on fruit at the Portland Exposition. This record was not equaled by any county on the Pacific Coast.
Shipments last year aggregated 1,000 cars. We will have more this year and still more next.
Fruit noted for flavor and keeping qualities.
No worms.
We will have fifty cars of fancy Spitzenbergs and Newtowns this season.
Eighty per cent of fruit raised in Wenatchee, Entiat and Columbia Valleys will be shipped by the

WENATCHEE VALLEY
FRUIT GROWERS' ASSOCIATION

Headquarters at Wenatchee, the Big Red Apple Metropolis

ESTABLISHED 1863 225 ACRES

THE WOODBURN NURSERIES

When we tell you we were established in 1863, it does not mean it was by some one in a back lot, but by the father of the present owner, at the present place, to which I succeeded on January 1, 1892. We have a reputation to sustain, and why not let us ship you some of our guaranteed

TREES AND PLANTS

F. W. SETTLEMIER

Agents Wanted WOODBURN, OREGON

Okanogan NURSERIES

HARDY, NORTHERN GROWN TREES

POGUE, WASHINGTON
[OKANOGAN COUNTY]

A PROPOSED OREGON FRUIT LAW

AN act to prevent the false branding or marking of, or false representations with reference to fruit, vegetables, dairy or other agricultural products grown in the State of Oregon, or elsewhere, and to provide penalties for the violation thereof.

Be it enacted by the people of the State of Oregon:

Section 1. It shall be unlawful for any person or persons or corporation falsely to label or mark any box or package of fruit, to wit.: Green fruit, such as cherries, pears, peaches, prunes, apples, and the like, or any other fruit. vegetables, dairy products, or other agricultural products grown in the State of Oregon, or elsewhere, as having been raised or produced in any locality other than the locality by which said locality bears name; or by the name of the person or corporation by which such fruit, vegetables, dairy products or other agricultural products were actually raised; or to indicate, by such labelling or marking, that the same were packed at any locality other than the locality by which said locality bears name, or by any person other than at the locality aforesaid and by the person or corporation actually packing the same; or to otherwise mark or label any such box or package so as to mislead the public as to the locality aforesaid where the same was raised or packed; or to ship, sell, or dispose of any such produce so falsely labelled or marked.

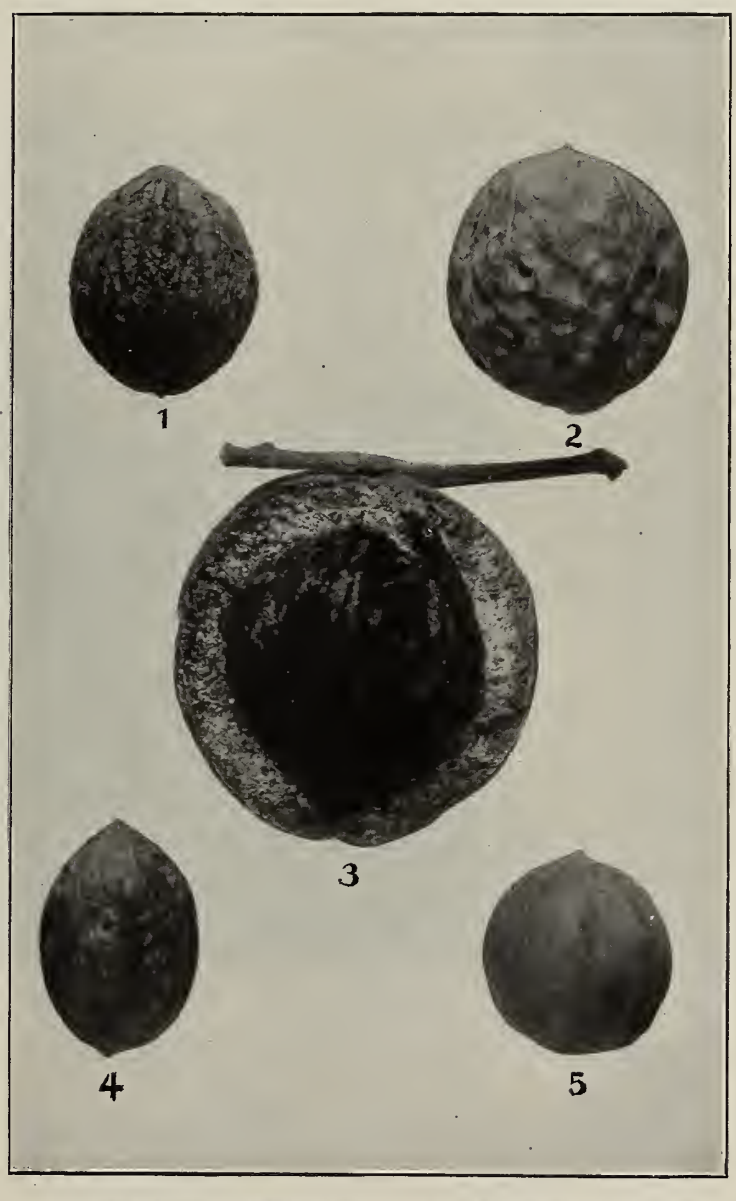

Plate Eighteen—1. Juglans Nigra. 2. Juglans Manchuria. 3. Juglans Nigra. 4. Juglans Sieboldianna. 5. Juglans Californica. Natural Size

Sec. 2. It shall be unlawful for any dealer, commission merchant, shipper or vender, by means of any false representations whatever, either verbal, printed or written, to represent or pretend that any products mentioned in section 1 of this Act, were raised, produced or packed by any person or corporation, or in any locality, other than by the person or corporation, or in the locality where the same were in fact raised, produced or packed, as the case may be.

Sec. 3. If any dealer in any of the products mentioned in section 1 of this act, or commission merchant, shipper, vendor or other person, shall have in his possession any of such products so falsely marked or labelled contrary to the provisions of section 1 of this act, the possession by such dealer, commission merchant, shipper, vendor or other person, of any of such products so falsely marked or labelled shall be prima facie evidence that such dealer, commission merchant, shipper, vendor or other person has so falsely marked or labelled such products.

Sec. 4. Any person violating any of the provisions of this act shall be deemed guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine of not less than fifty nor more than five hundred dollars or by imprisonment in the county jail not less than ten nor more than one hundred days or by both such fine and imprisonment at the discretion of the court.

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Maywood Colony: an Ideal Home-Building Settlement in California

In which good people, from all over the world, are making homes

As you go, by the Southern Pacific Railroad, from Portland to San Francisco, you pass through this well-known colony settlement. On either side of the railway, for a distance of eight miles, you will see orchards of oranges, lemons, olives, figs, almonds, grapes, peaches, pears, prunes and apricots. Scattered here and there among these orchards you will observe well-kept, thrifty-looking homes — homes that look like real homes. You can't help but note the difference in the appearance of these colony homes and those which you will see both before reaching and after passing through the colony. Outside of this colony settlement you will see, as a rule, little houses and big barns, and that most of the houses are total strangers to paint. But when you strike Maywood Colony you'll see a different class of architecture, and you'll note that all of the houses are well painted and well kept up. These colony houses are the homes of people from the East who have settled here during the past ten years. At the present time there are just about 3,000 people here, and every day some new arrival gets off at the colony depot to look the country over. There is yet lots of land in the colony for sale, and there is plenty of opportunity for those who know how to take advantage of it.

That you may know the exact location of this colony you should be told that it is just 20 miles south of Red Bluff, and just across the Sacramento river from the celebrated Stanford ranch and vineyard. Tehama is the county in which this colony is located, and Tehama county is the most northerly county in the Sacramento Valley. Tehama county is noted for its variety of resources. Its geographical location gives it mountain, foothill, and valley conditions. The mountains afford endless water power which is being converted into electric power, and conducted to points all over the Sacramento Valley. In the mountains in this county are immense sawmills. These mountains afford summer range for hundreds of thousands of sheep. This county, by the way, is the largest sheep raising county in California.

In the foothills are many delightful homes. The climate is such as to produce the best of apples, beans, potatoes, etc.

In the valley we have the rich bottom land along either side of the Sacramento river. Here is the home of the sugar beet, of hops, alfalfa, corn, potatoes, vegetables, fruits of all varieties, as well as cereals of all kinds.

The Maywood Colony is located on the upper end of the Sacramento Valley, just where the valley land begins to undulate in its approach toward the surrounding mountains. Its setting is an ideal one, being encircled on the north, east and west by nearby mountains from six to fourteen thousand feet in height. While there is practically continuous summer in this valley, perpetual snow rests on the roundabout mountains. To the eye this contrast is a source of constant admiration.

Corning is the name of the railway station for the colony. You arrive here in about thirty minutes after leaving Red Bluff. You can't help but know, as soon as you see it, that it is an Eastern town in a Western country. The first object which will arrest your eye, as you look out of the car window, is the home office of the Maywood Colony—a striking structure of Spanish architecture, with an observatory, or tower, one hundred feet high. Stately palms border the office grounds—the whole forming

A GLIMPSE OF THE HOTEL MAYWOOD GROUNDS

These oranges, lemons, olives, palms, pomelos and callas, all growing in the open, tell of the temperature at Maywood. Truly, this is a pleasant place in which to live. Come and see for yourself.
W. N. WOODSON,
Proprietor of Maywood Colony, Corning, California.

an effect most pleasing to the eye that sees beauty in beautiful things. Just across the street from the office you will see the Hotel Maywood, a big, comfortable hotel, surrounded by ample grounds, in which you will see growing oranges, lemons, pomelos and palms, and other ornamental plants. Right here you have a positive demonstration that delicate citrus fruits and plants will thrive in the open air in this climate. Back of and beyond the colony office and hotel stretches out the colony village of about 2,000 population. Corning is an unusually ambitious and progressive place—in fact, Corning is a city, for it was recently incorporated as a city, with an area of 1,170 acres within the corporate limits.

And the first important move that the citizens took was to vote the town a DRY town—so that saloons might be kept out. The people who are settling here are of a moral, home-building kind, and the sentiment is strong against saloons.

Corning has five general merchandise stores, one of which is a co-operative store, with some 180 members. There are two good hotels, two newspapers, two telegraph offices, two lumber yards, two livery stables, an express office, telegraph office, bank, a cannery and fruit packing house, an up-to-date creamery and a lot of other business houses usually found in thrifty towns.

Corning is especially proud of her six churches, three of which would be counted as good church structures in a city of ten thousand people. By this you'll see that Corning is looking well to the spiritual side of life.

To her schools Corning has also given unusual thought and support. In the grammar school nine teachers are employed, while in the high school six teachers are provided. In the colony, and outside of the town of Corning, there are three additional grammar schools.

That you may understand the exact relation sustained between the City of Corning and Maywood Colony, let me explain: Maywood Colony contains 39,000 acres of land, divided into blocks of 80 acres each, with 40-foot avenues bordering each and every block. Each of these 80-acre blocks is subdivided into eight 10-acre lots. The colonists buy and own from one-half a lot to four lots. Most of them own two lots, or 20 acres. Now, right out of the center of this 39,000-acre tract 1,170 acres have been cut out and cut up into business, residential and villa lots. By this you'll see that Corning and Maywood Colony are one, but that the railway station and postoffice go by the name of Corning, while the adjoining land is legally known as Maywood Colony. The cause of the two names for the same place is that the railway station and postoffice were established long before the colony was started. Prior to the coming of Maywood Colony this same land was used for wheat and barley culture, and Corning was the shipping point.

The industry to which most of the colonists turn their attention is that of fruit growing. In the colony some 12,000 acres are now set to trees, and additional orchards are being planted each year. The place is a natural fruit country. Nowhere in California does fruit culture meet with less resistance. The weather is never cold enough to hurt the trees. The trees are practically free from all tree pests. Fumigating and spraying, which is so necessary in many sections of California, is not needed here. The climate is just right for open air, or sun-drying. Water is sufficiently near the surface to mature big crops of fruit without irrigation. Of course, in the absence of irrigation, cultivation must be thorough. At convenient points in the colony there are five different drying plants at which the peach, pear, prune and apricot crops of the colony are cured. These drying plants offer to the fruit grower a variety of propositions of which he can take his choice. They will either buy your fruit, fresh, for so much per ton, on your trees, or so much per ton delivered at the dryer. Or, they will cure your fruit for you for so much per ton, and deliver it to you, you selling or holding it, just as you see fit. Or, you can buy stock, or a membership in one of these concerns, have your fruit cured and sold by it, and participate in the annual dividends. No trouble to market fruit at Maywood.

In Corning, and on the railway, is located the big fruit packing house where the dried fruit of the colony is processed, and packed for Eastern shipment. During the packing season this plant affords pleasant and paying employment for every available man, woman and girl on the colony. Practically all of the colony fruit crop is sold in dried form. In this form there can be no loss. The fruit is paid for as soon as it is loaded into cars. Fresh fruit consignments are always risky, and the Maywood Colony fruit growers do not sell their fruit that way. A market has already been developed which calls for the entire Maywood brand of fruit. The excellence of the fruit commands top prices.

The olive crop of the colony, which is a big one, finds ready sale. Many carloads of olives are shipped from Maywood to Los Angeles, at which place a big demand has been created for ripe pickled olives. Some of the colonists pickle their olive crop and find a ready market locally.

The almond crop of the colony is usually engaged, or contracted for, two months before it is time to harvest the almonds. This statement is made to show that the market for the Maywood Colony product is already established, and that a prospective settler need not bother his head about what he is going to do with his fruit when he has produced it.

Close to the fruit business as a money maker comes the hen—the White Leghorn hen. She is a money maker here. This is the hen's heaven. The climate just suits her. She knows but little, if any, disease here. Here she lays an average of 13 dozen eggs a year, and the average selling price of these eggs is 22 cents per dozen. This is a gross annual earning per hen of $2.86. Poultry people here allow $1.86 a year for the keep of a hen, and give her credit for earning a net profit of $1 a year. Many of the colonists carry from 250 to 500 hens, and some as many as 1,000. The hens find plenty of natural green grass here for seven months in the year. Alfalfa patches supply green food during the other five months. The most successful poultry growers cut their wheat with a binder, and feed the wheat in the bundle. This plan saves the cost of sacks and threshing, and it gives the hen necessary exercise. Colonists who keep hens always have a rattle in their pockets.

Corning enjoys the distinction of being the biggest turkey shipping station in the State of California.

As a third source of regular income many of the colonists keep a few cows, the product of which is sold to a creamery located in Corning. This is an exceptionally good grass country. Alfalfa yields from three to five cuttings a season. One acre of good alfalfa keeps two cows.

Many of the colony orchards are owned by absentees, and the care of these orchards, including harvesting the fruit crops, affords a vast amount of work for those who are on the ground. An effort is made by the colony management to distribute this work in an equitable manner among those colonists who are equipped to perform this class of work.

One of the valuable assets of the colony, and one which costs the colonists not a cent, is the Sacramento river, which forms the eastern boundary of the colony for a distance of seven miles. In other words, the colony has a river frontage of seven miles, and the colony land is above danger from overflow. This river is full of salmon, sturgeon, carp, pike, bass and catfish. Thousands of pounds of salmon are seined at this point and shipped to the salmon canneries. The river affords a great hunting place for quail, dove, geese and duck. Of course, the boys and girls have their boating and swimming clubs.

Located on the colony side of the river are the immense freight houses of the Sacramento Transportation Company, from which large amounts of grain are shipped. Most of the merchandise freight for the City

HOME OFFICE OF THE MAYWOOD COLONY

This elegant and substantial concrete building symbolizes the permanency and stability of Maywood Colony. It means more. It means that I am here to stay. I have been pulling for Maywood for the last twelve years, and I expect to remain long in the same harness. It also means that the money that I make out of Maywood I put back into Maywood.
W. N. WOODSON,
Proprietor of Maywood Colony, Corning, California.

of Corning comes by boat. A transfer line hauls the freight from the river to the city. This river freight line is a great equalizer of freight rates.

Most of the wood consumed in Corning and on the colony comes from the river. The bank is heavily wooded with oak, cottonwood and sycamore for a width of from one to two miles. Much of this land will cut 200 cords of wood to the acre. Oak wood at the stump sells at $3.50 per cord, and for $5.00 per cord delivered in town or the colony.

No section in the United States gives its settlers better drinking water than this. It is soft as rain water, and exceptionally pure. The whole valley in which Maywood Colony is located is underlaid with a sheet of this water, which runs from 8 to 15 feet from the surface. The supply is inexhaustible. No place in California can water be pumped at a smaller cost than right here.

One thing that we brag about is the character of the people who have made their homes here. There are no Japs, Chinese, Italians, Negroes, or other objectionable foreign element mixed up with us. They are not here because they are given no encouragement. They are not employed. We prefer to hold all work for colonists.

An interurban railway has just completed its location through the colony, and secured its depot site in Corning. The management assures us that this road will be in operation before twelve months from date. We all know how demand for property follows the construction of these lines. An electric road of this kind does much more to populate a country than does a steam road. With the electric road, every man's farm is a depot, but not so with the steam road, which stops at towns only.

There can be no question but that there is now at work a combination of conditions which will make of this colony settlement an important place. The indications are that it will soon become a fancy residential place, for nowhere for miles on either side of the colony is there a place which presents so many natural advantages for home-building as this. Thousands of Eastern people have their eyes on Maywood, and just as fast as they can wind up their Eastern affairs they are moving here. While there are now 3,000 people here, it is safe to say that not more than 25 per cent of the land owners in the colony are now living here. They are getting their land while prices are within reach. Some of them are having their places planted and otherwise developed prior to their coming here.

Here is a settlement in which good fruit and alfalfa land can be bought for $50 per acre. A ten-acre lot costs $500. Many people are acquiring one of these lots by paying $50 down, then $12.50 per month for 36 months. No interest is charged on the deferred payments, and the seller pays taxes on the land until the payments are completed. This is a mighty easy way to become the owner of ten acres of good land, in a good community, and in a good country. The same kind of land is being sold in many places at from $100 to $250 per acre, and in time will sell at these advanced prices in Maywood Colony.

W. N. Woodson, of Corning, California, is the proprietor of this colony. He has been at its head since 1893. He is a heavy fruit grower at the colony, and has much to do with the general policy of the colony management. If you would care to look into all of the details of a place like Maywood Colony, write to Mr. Woodson, and he will send you printed matter in which there are maps of the colony, prices and terms for the purchase of the land, views of the business houses in Corning and colony residences, views of orchards of different varieties, and much other matter of interest to one looking about for a home, or an investment. All this printed matter is absolutely free.

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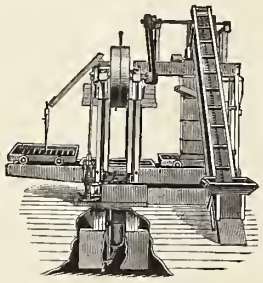

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The DAVIDSON FRUIT CO.
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STANDS AT THE HEAD OF THE LIST AS
PACKERS AND SHIPPERS

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Our mission is to give the growers good prices, and the buyers fruit of such quality as will enable them to make satisfactory profits.

Our specialties are APPLES and STRAWBERRIES, but we handle all kinds of fruits grown in this section, including Pears, Plums, Cherries, Blackberries and Raspberries. If you are a buyer write us. If a grower call and see us, or telephone Main 71.

DAVIDSON FRUIT COMPANY

HINTS TO SHIPPERS AND RECEIVERS OF FRUITS AND PRODUCE

THE following article, Hints to Shippers and Receivers of Fruit and Produce, is so complete, instructive and valuable that we see fit to reproduce it from a pamphlet issued by Geo. C. Stiles, attorney at law in Minneapolis. Being acquainted with Mr. Stiles, we received one of these pamphlets which he issued for his patrons. It is reproduced here, not upon his solicitation, but because we believe it will be of inestimable value to shippers and receivers. It tells you what to do about a loss, and gives the name of an attorney with offices in every large fruit center who makes a specialty of attending to claims. The different cities where offices are maintained, and a large number of references of fruit firms with whom many of you are acquainted, gives you an opportunity to make such inquiry as you may see fit as to Mr. Stiles' ability and reliability:

Written Claim—How and When Made

Nearly every bill of lading now in use requires the presentation of written claim for damages to the agent of the delivering line within a given number of days after delivery, usually within thirty days, but sometimes within ten, even five days. This requirement is held valid and binding upon consignor and consignee by the courts of forty states and if not complied with, affords the carrier an absolutely perfect defense, no matter how negligent it may have been. No verbal notice, complaint or protest, no matter how specific, vigorous or prompt, will avail or suffice. It absolutely must be in writing and presented to the agent of the delivering line within the time specified in the shipping receipt or bill of lading or your claim is barred in law, unless the carrier voluntarily waives such defense.

In order to protect your rights under such a bill of lading you should be sure to fill out a notice of claim, using the form found on the last page hereof and filling in the blanks to cover the facts, taking care to state a sufficiently large amount to cover any possible loss, and mail or deliver the same to the local freight agent of the delivering line at point of delivery. This should be done at once, not in a week or a month, but immediately after delivery. Make a note on a duplicate of this notice, showing date of mailing of claim and person who mailed or delivered the same and then file away in an envelope or jacket along with the original paid expense bill, bill of lading, invoice, account sales, inspector's and teamster's reports and all correspondence relating to the claim. Later and when the exact amount of loss has been ascertained, you may amend your claim accordingly and present to the freight claim agent at your leisure.

Basis of Claim

The great majority of bills of lading now in use require the claim for loss or damage to be based on the value at time

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DON'T YOU DO IT
PAY RETAIL PRICES FOR OLD CARRIED-OVER
GRASS SEEDS
WHEN YOU CAN PURCHASE NEW SEED DIRECT AT WHOLESALE
WRITE FOR PRICES OF JUST WHAT YOU WILL WANT

J. J. BUTZER, Seedsman
190 FRONT STREET, PORTLAND, OREGON

and place of shipment unless a lower valuation has been agreed upon, but as some of the bills of lading do not contain this provision and sometimes shipments are actually made without any bill of lading to cover and as claims based solely on decline in market during negligent delay are not affected by this limitation—and in a few states the courts holding this limitation not to apply to loss due to the carrier's negligence—you should always make up and file your claim on the basis of the actual market value at destination, where such value shows a profit. It will be time enough to present your invoice and accept settlement on the basis of cost price with freight added, when the freight claim agent announces his readiness to pay, but until that time, he is not concerned in the question of cost at all.

Written Records

As promptly as possible after learning of damage to a consignment, procure a written statement from every witness possible at point of shipment, showing the time and place of loading the car, its number and initials, kind, quality and condition of the load, the manner of packing and loading in the car, how piled and slatted and if iced, how full, how ventilated, if at all, in short—get a complete written statement, signed by all witnesses who know the facts showing everything necessary to sustain your claim in court. This is even more important than securing a record of the facts and evidence at your own end of the line, because such evidence is generally accessible and easily obtained, as it is usually in your own possession or that of your employes.

Bad Order Record

As soon as a consignment is examined and found damaged, you should have two or more persons make a thorough examination at the car, not only of the conditions of the contents, but also as to the state of ice in the iceboxes, position of the vents, whether opened or closed, temperature inside the car, making an actual test with a thermometer for at least 15 minutes with the doors tightly closed; then have each witness make and sign a full statement or report of the car, number and initials, date, hour and exact place of examination and of all facts as to condition of the consignment, temperature, state of ice, position of vents, evidence of rough handling and all other material facts in relation thereto as provided in the form of Inspector's Report. The importance of properly preparing your proof, on which alone you must rely for recovery and its preservation by a written record in compact, handy form cannot be overestimated.

Bad Order Notations

Always where possible procure from the local freight agent of the delivering line a notation on the original paid freight bill acknowledging damaged condition of the consignment at time of delivery. This information should cover freezing, as well as heating, rough handling, decay or shortage because carriers are as much liable for freezing through negligence as for any other loss or damage arising from their carelessness. When you have secured a suitable notation over the signature of the freight agent, you have instantly made it practically impossible for the carriers to successfully dispute the condition of the property at time of delivery, while on the other hand, if you fail to secure such notation or at least demand it, you are always confronted with the claim of the carrier that delivery was effected without complaint or objection and a clean receipt given to the carrier, thus making a formidable defense on the question of condition and amount of damage.

Keep Original Paid Expense-Bill

Never under any consideration file or surrender the original paid freight bill until settlement of your claim has been agreed upon. This paper is invaluable to you, particularly if it contains a bad order notation and is so uniformly lost by interested claim agents as to render its filing or surrender so dangerous that it should never be done until after settlement has been agreed upon. No good purpose can be served by surrendering this original receipt, because the freight claim agent can always secure an exact copy from the office of the local freight agent, which will serve his purpose in

APPLES

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Tobacco Dust FOR WOOLLY APHIS

Spring and Summer is the time to fight woolly aphis, and Tobacco Dust is the preparation to use in fighting it. Tobacco Dust is safe and effective, and is a valuable fertilizer for the trees as well. It is recommended by the Missouri Experiment Station and other authorities.

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Send for circular quoting prices. Do this now, so the Tobacco Dust can be applied to your trees, and the rains will leach it down among the roots, killing the woolly aphis and fertilizing the trees for this season's growth.

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THE FINEST BERRY ON EARTH AND THE BEST SHIPPER

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HOOD RIVER, OREGON

every detail quite as well as your original receipt.

Carrier's Liability at Destination

Agents and representatives of railway companies uniformly insist that after a car has arrived at destination, been set on the team or delivery track and notice given to the consignee, that complete delivery has been effected and that the carrier owes no further duty to the property or to the owner thereof. This is not the law. The carrier in such case is still under the legal obligation to use reasonable and ordinary care for the protection and preservation of the property from injury or damage from heat or cold or any other cause, during every hour of the time that the property remains in its possession and under its control and it is liable in law for any damage arising from its negligence or failure to use such care as a reasonably prudent and skillful person would have used under the same circumstances having at his command the same means or facilities as the carrier possesses.

Protection Against Delay at Destination

The carrier at destination, except in some three or four states, is not required to notify the shipper that his property has not been accepted by the "notify consignee" and the only way to protect yourself against loss by delay at destination is to have noted on the bill of lading, by rubber stamp or otherwise, the following notation: "If property not promptly accepted railway agent at destination must wire ..... (Shipper) at ..... (Address of shipper) at his expense."

Icing Instructions

It is the duty of a common carrier by rail to keep cars of perishable merchandise fully iced at all times during hot weather while in transit, unless otherwise expressly directed by consignor or consignee. Shippers frequently have noted on the bill of lading specific icing instructions as follows: "Ice at A and B," or "Ice at all icing stations," and the like. This is not only wholly unnecessary and dangerous, but absolutely suicidal, because by giving such directions, the shipper impliedly accepts such icing service as sufficient and satisfactory when in fact, because of unexpected delay, either negligent or excusable, the ice may run out entirely or some one of the carriers may not have sufficient or indeed any icing stations on its line, whereby the property may become partly or completely destroyed and the carrier still have a perfect defense, because it can readily prove that it obeyed the instructions of the shipper. You should never authorize or direct any other notation to be made on the bill of lading upon the subject of icing than the following: "Keep fully iced to destination." or "Re-ice when necessary."

Express Companies

These companies are uniformly held by the courts of the country to be common carriers and are liable for the negligence of the different lines of railway employed by them in the handling and transportation of their cars or property. They frequently seek to escape liability by referring the shipper to the railway company or companies which in fact actually hauled the car containing the goods, while themselves disclaiming legal responsibility for the acts of such railways over which, as they claim, they have no control. Do not be deceived by any such

THE cover page of the Portland Seed Company's catalogue was so attractively done that we wrote them a letter complimenting them upon their high-class work and intimating to them that we would like to have a miniature cut of the same to publish in "Better Fruit." This they have kindly furnished us, and it appears at the head of article. We do this for the reason that we believe it our duty to encourage every orchardist, in addition to running his orchard on business principles, to set out flowers and plants around the yard to beautify his home. We have bought a great many plants and seeds of the Portland Seed Company, have always found them to be good, and the prices satisfactory. We hope orchardists will take advantage of this suggestion, send for a catalogue, plant a few flowers, etc., and endeavor to make the place look beautiful in addition to making the orchard attractive.

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ROGUE RIVER LAND COMPANY
MEDFORD, OREGON

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

pretence or claim, because these express companies are in fact and law, absolutely liable for the acts of the railway companies employed by them in the prosecution of their express business and cannot escape liability for their negligent acts, even where they seek to do this by particularly reciting their exemption from such liability in their shipping receipts or contracts.

I shall not only be pleased to mail to any dealer on request a reasonable allotment of Inspector's and Teamster's Reports, as well as Hints, without charge, but will also gladly furnish full advice upon inquiry, respecting any claim for loss or damage against a common carrier and invite correspondence upon this and kindred subjects, to the end that your rights and best interests may be conserved.

(Concluded in March issue.)

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BLOOMING
BULBS
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HOOD RIVER, OREGON

A Monthly Illustrated Magazine Published in the Interest of Up-to-date Progressive Fruit-Growing & Marketing

All Communications should be Addressed and Remittances made Payable to the Better Fruit Publishing Company

E. H. SHEPARD AND E. A. FRANZ
EDITORS AND PUBLISHERS

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ADVERTISING RATES FURNISHED ON APPLICATION
Entered as second-class matter December 27, 1906, at the post office at Hood River, Oregon, under the act of Congress of March 3, 1879

BETTER FRUIT is meeting with phenomenal success. Everybody says, "It is just what we want." Our subscription, although it is but five months since we began its publication, increased 672 in the month of December, which is certainly very gratifying to us, and indicates the splendid appreciation of its merit; and we have not had a single canvassing agent in the field. But why? Let us tell you. The editors were raised in the fruit business, and we are now engaged in growing fruit, where we get the practical part. In our work we do the very things we tell you how to do. We have the same difficulties to contend with that you have, and the same obstacles to overcome. Consequently, we are able to tell you how to do these things in the best possible manner. We anticipate your wants and your troubles. In addition to all this, personal experience in managing the fruit growers unions in Hood River we get the benefit of our three hundred progressive fruit growers' personal experience almost daily. We attend the association meetings, subscribe to over fifty horticultural papers, possess every text book worth owning, and receive every bulletin from the horticultural state experimental stations. Many men who have never worked in an orchard, who have an office in the city far away from any fruit district, assume to edit a fruit paper by asking growers how to do things and then trying to tell you. Compare such conditions with ours. Subscribe for "Better Fruit" for a year and then see which you find the most valuable and instructive, and govern yourself accordingly.

THE commercial feature of marketing fruit is so ably handled by "Better Fruit" that many subscribers wonder how we do it. It is not that we assume that we are smarter. It is because in the management of the Hood River Unions we are in daily touch with many features of marketing. We know every market daily by letter and wire. We know what the buyer wants, when and how he wants it, therefore "Better Fruit" can inform you on this line. We do not know of a single editor of a horticultural paper engaged in managing an association except "Better Fruit" editors. Therefore, we can tell you about the commercial side of fruit growing, and no other paper can present this feature as we do, because it is our regular business.

PERHAPS there is no phase of fruit growing that i more surprising to the man who views fruit growing with a passing glance than the discovery that most of those engaged in it have at some time been in some other business or profession. This fact does not cause so much astonishment to the Western man as it does the visitor or intended resident of the Coast States from States bordering on the Atlantic, and whose rule of life is fashioned after a more fixed principle than that of his western contemporary.

The assumption that in order for a man to know one thing well he must be ignorant of a thousand others apparently does not find substantiation in the successful growing of fruit. Investigation shows that men of all classes and conditions are engaged in this occupation, and it may be added, successfully. In fact, it seems that the great diversity of former occupation and the natural resultant divergence of opinion has done much toward the production of superior fruit.

Unwilling to accept the hard and fast rules laid down by a former generation of sticking a tree in the ground and letting it exist as best it may, he has combined theory with practice and secured results that have astonished the world. The man who, in the later or middle years of his life, has taken up the raising of fruit, has undoubtedly led the van. He it is who has experimented, adopted new methods, and studied the alterable law of cause and effect wherein lies the secret of all things physical. His less intelligent, but observing and thrifty neighbor, has not been slow to follow.

The orchardist of opinions of former days who has refused to conform to the ideas of his latter day contemporary has been left by the wayside and finds that there is much to be learned about the successful growing of fruit besides planting the trees. He may scorn, as in many instances he does, the progressive ideas of the former lawyer, doctor or business man who has taken up fruit growing as a business, or perhaps a hobby, but in doing so he does it at the cost of failure. The many-sidedness of the American is the astonishment of all other nations, and in his adaptability to conditions wherever found he is conceded without a peer.

More probably the secret of the professional or business man going into fruit culture may be found in the fact that there is a period in most men's lives who have lived in the turmoil and business strife of the city when their thoughts turn toward the natural occupation of mankind, that of tilling the soil. It is those who follow this inclination with action that we find cultivating the apple, or whatever fruit they think will yield the best returns, and who have without question done much if not more than anything else to put fruit raising on both a scientific and a business basis.

BETTER FRUIT is the only paper devoted exclusively to commercial fruit growing published in the world. A banker of this city returning from a visit in the East when coming through Colorado was attracted by a fruit man distributing literature regarding Colorado as a fruit country. After accepting the pamphlet he brought forth a copy of "Better Fruit." "O, yes!" exclaimed the agent, "I have seen it; I am a subscriber, and "Better Fruit" is the best fruit paper in the world."

THE following meetings of State Horticultural Societies have been held: Idaho, at Payette, December 27-8-9; Washington, at Everett, January 14-5-6; Oregon, at Portland, January 8-9-10; Northwestern Fruitgrowers Association, at Seattle, January 16-7-8.

Growers, horticulturists and nurserymen have been in attendance at one or all of these meetings from nearly every fruit district in the Northwest, and it seems timely to offer a suggestion.

In each district those who have attended should get together and formulate a plan, get up a program, and issue a call for a local horticultural meeting. Information gathered can be given to the many who were unable to attend the state meeting, and of course you know this represents the majority. In addition to this feature, your own growers can be called on for short addresses on subjects upon which they are recognized as being well posted, a general discussion can follow. The plan has proved such a success and of so great a benefit that we feel it our duty to urge those who have attended any of these meetings to get together and put it in action. Our reason for offering this advice is based on the success with which this idea was carried out last year at Hood River after the usual state meetings were over. The plan was quickly endorsed, a program arranged and a call issued, and we had an attendance of over three hundred growers, and it was not only the largest, but most enthusiastic meeting we have seen, as well as the most instructive.

THE March number will be devoted largely to association work. It will contain illustrations of the principal associations of the Northwest. Another feature will be illustrations with comments on growers' packing houses. This will be a growers' and shippers' number. The April number, which will be issued promptly, will contain all the different formulas used in spraying for different diseases, and also the methods, with a most exhaustive and complete article on spraying for codlin moth that has ever been written. All of this information will be confined to the practical side of the question. The April number on spraying alone will be worth to any man engaged in the fruit business many times the cost of subscription for a year.

BETTER FRUIT is giving information about the commercial side of fruit that no other horticultural paper is giving, because they don't get it, and they don't get it because they are not in position to get it. The editors of "Better Fruit," in managing the Hood River Associations, are in daily touch with the commercial features. We are presenting in another column an article entitled Hints to Shippers and Receivers. The value of this article to fruit growers has never been equaled in any dozen copies of any other horticultural paper we have ever seen. It is new, up-to-date, and just what every shipper ought to know, and wants to know, and furthermore comparatively few are well informed along this line. Hints to Shippers and Receivers is so valuable we urge you not to miss reading it. It is published without solicitation.

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is now ready and will be sent free to those requesting it. Rose buyers are welcome to visit our Nurseries and inspect the stock we offer for sale.

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It is the only fruit paper published in Canada and is the official organ of the Ontario, British Columbia, Quebec, and Prince Edward Island Fruit Growers Associations. *Subscription rates, 50 cents a year; four new subscriptions for $1.00; three years subscriptions for $1.20. Write for sample copies.*

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First-Class Yearlings

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Make More Money on Fruit Crops

Everyone who grows fruit, whether a large commercial grower, or one who has only a few fruit trees, a berry patch or a garden, should be interested in knowing how to get the most profit from his crops.

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ST. JOSEPH, MISSOURI

is the only magazine in America which is devoted exclusively to the interest of those who grow fruit. It is handsomely illustrated, and contains from 36 to 76 pages each month. It tells all about fruit of all kinds—and nothing but fruit—how to market, how to pack, cultivate, spray, prune, how to MAKE MORE MONEY from your crops. Sample copy sent free. Regular price is a dollar a year, and each subscriber is entitled to a choice of any one of our series of ten Brother Jonathan Fruit Books—the best in existence.

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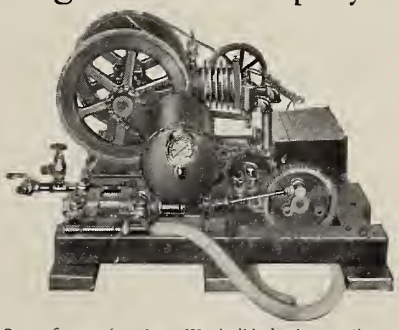

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April 4, 1902	69,530.57	April 4, 1905	160,031.71
April 4, 1903	128,481.75	April 4, 1906	281,042.83

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It partakes of the blackberry form but is wondrous in size, is more like the raspberry in flavor but more luscious, grows most rapidly and yields in amazing profusion. The berries grow in clusters of from five to ten or more, and the vine being free from thorns the fruit is very easy to gather, making it one of the most economical of all berries to pick.

This marvelous berry is a cross between the California Dewberry and the Cuthbert Raspberry. The infusion of the desirable qualities of the Cuthbert into the hybrid "Phenomenal," has given to the world a new and improved variety, and without a doubt one of the most successful in all the berry list.

Possessing so many qualities of superlative excellence as does this grand "Phenomenal," it should be started without delay, not only by those who grow for market supply, but in every home garden, as well.

All our roots of this valuable variety have had the benefit of growth in our Puget Sound Nurseries, and are hardier and more vigorous than those from southern climates. We have arranged to supply a large demand, and are prepared to fill orders at the following prices: Each, 20c; dozen, $2.00; shipment at purchaser's expense. Prepaid, each, 25c; dozen, $2.50.

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Enclosed is $....., for which please send me $..... worth of Lilly's Phenomenal Berry Roots, as described above.

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CUTHBERT RASPBERRIES—True stock, Puget Sound grown. Postpaid, 6 for 50c; 12 for 75c. By express at purchaser's expense, 100 for $4.00, 1000 for $35.00.

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A FATAL MISTAKE

is made by those who cling to old methods in marketing the products of their fields and orchards. Conditions are changing, new business methods are being adopted. *A revolution is at hand* and we wish to call the

SHIPPERS' ATTENTION!!

to the part we are taking in bringing about a better system and in building up a National Trade and Credit organization for their assistance and protection. We furnish this through two channels.

INFORMATION—Credit and Trade information is of first importance to a *successful* shipping business. The Credit Book contains 50,000 names. It shows: First—Who receives *what you* ship. Second—Their specialties. Third—Their financial responsibility. Fourth—*How they have treated other shippers. That's your best credit guide.* Weekly Credit Sheets keep you thoroughly posted on current changes.

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State .....

Orchards!! and Orchards?

The False Economy of Selecting Cheap Trees

Quality must absolutely be placed first if you are to make a success of your orchard. Many a man preparing to plant an orchard or even a few trees, looks so long at the few cents difference between first-class stock and the unknown or questionable kind, that he entirely overlooks the immense difference in returns to follow. One good apple to a tree will often pay the difference between the cost of high grade stock and the cheap sort.

The Washington Nursery Company's plant is on the Yakima Indian Reservation where clean trees are grown in the finest soil in the world, miles removed from any old or pest-ridden orchard. Their selection, planting, budding, grafting, cultivation, packing and shipping are under the personal supervision of Mr. A. W. McDonald, who is recognized as one of the most thorough nurserymen in the trade.

The one-year-old tree on three-year-old root grown by the Washington Nursery Company is larger than the two-year-old sold by Eastern firms. The fertile soil and careful cultivation produce a root of large proportions which sustains and nourishes a vigorous growth of the top the first years of life going into wood instead of fruit, hence when bearing begins the third year there is ample body to sustain a heavy crop.

The quick growth produced by "knowing how" starts early in the spring and continues till about August 15th, after which the sap hardens, the leaves ripen, and the trees is ready for the necessary handling and transplanting.

The farmer or orchardist, if planting for himself, wants nothing but the best, hence if he is wise he ignores the few cents first cost of the tree when he considers that as soon as planted it is worth a dollar, and increases in value at that rate yearly.

If he is planting an orchard to sell at once, he cannot afford to take a chance on unknown or unreliable stock, for the first question the prospective buyer asks is "what kind of trees have you, and where did you get them"?

Mr. F. A. Huntley, State Horticultural Commissioner, of Tacoma, expressed himself as follows at a recent convention:

"The fruit grower is striving to improve the standard of quality in his products. He sees the necessity of eliminating the pests, and to that end adopts every improved remedy. The best methods of pruning and training receive careful attention. He cultivates, and irrigates when necessary. Yet when it comes to the selection of nursery stock, fruitgrowers too often display poor judgment. A catalogue price usually denotes a live tree. This is not enough, and the planter is largely to blame. The question should not be how cheap, but how good. Quality should be the governing principle. Nurserymen will furnish what is demanded of them by discriminating buyers, but "cull" prices are often worked in the nursery trade the same as in fruit traffic. High standards in every line pertaining to horticulture must ultimately prevail."

A more concise statement of facts touching on the present subject could not well be put into words, and we commend the above to the careful consideration of prospective buyers of nursery stock.

Write us for particulars as to varieties, nearest agents, etc., or if convenient, call and inspect the plant.

Largest stock of Home Grown Fruit Trees and Ornamentals in the Pacific Northwest.

Washington Nursery Company TOPPENISH WASHINGTON

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F. A. WIGGINS, Treasurer and Sales Manager

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Detroit, Michigan

NIAGARA GAS SPRAYER

The Niagara won highest praise at the competitive demonstration held under direction of the Oregon State Horticultural Society on January tenth, to which invitations had been given to all dealers in Spraying Machines to participate. The above picture was taken at demonstration in orchard of T. V. Sluman, Mt. Tabor. The barrel beside sprayer contains Niagara Lime and Sulphur Solution which was used while demonstrating.

Oregon Spray and Gas Co.

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and a local train between Portland and Biggs which enables you to visit any one of the Upper Columbia River points and return to Portland the same day. See schedule below

Daily				Daily
8:15 A. M.	*Leave*	PORTLAND	*Arrive*	6:00 P. M.
8:45		FAIRVIEW		5:30
8:50		TROUTDALE		5:25
9:12		BRIDAL VEIL		5:02
9:41		BONNEVILLE		4:32
9:53		CASCADE LOCKS		4:20
10:06		WYETH		4:06
10:33		HOOD RIVER		3:40
10:45		MOSIER		3:28
11:20		THE DALLES		3:00
11:59	*Arrive*	BIGGS	*Leave*	12:15

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General Passenger Agent, Portland, Oregon

The "Old Reliable"

Albany Nurseries

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A full line of General Nursery Stock, including many new and choice varieties

"The Best is the Cheapest"

If you want one or one thousand trees ours is the place to send for them.

Live salesmen wanted everywhere. Catalogue free on application.

ALBANY NURSERIES, Albany, Oregon

INCORPORATED

THE PLACE TO BUY YOUR TREES

Here are some VARIETIES we can furnish in LARGE QUANTITIES for SPRING PLANTING. All Trees are STRICTLY FIRST CLASS, CLEAN AND HEALTHY

One year old top on three year old root, the only kind of trees that should be planted

14,000	Arkansas Black
11,000	Grimes Golden
27,000	Newton Pippin
14,000	Rome Beauty
31,000	Jonathan
35,000	Spitzenbergs
15,000	Wagener
15,000	Winesap
15,000	King
9,000	Winter Banana

Our trees are endorsed by all LARGE COMMERCIAL PLANTERS

You do not pick $3.00 a box apples from small, scrubby, inferior trees. You must plant the best tree obtainable to get best results. If you are in the market for trees, it will pay you to investigate our stock before buying elsewhere

Oregon Nursery Co. Ltd.

Salesmen Wanted Everywhere

SALEM, OREGON

SPRAYING Made Perfect, Profitable and Easy

Important Explanation to Orchardists about *Rex Lime and Sulphur Solution* and Experimenting "Imitators"

Before trying to sell Rex Lime and Sulphur Solution to orchardists we corresponded with every State Experiment Station in the United States, sent them samples of it for analysis and offered to supply each station without cost with whatever amount they wanted for experimental purposes, requesting them to put it to the severest of tests and if 'twas not all we claimed for it, to condemn it. This was done for two reasons: First, we wanted to KNOW that it was all that we believed it to be; second, we wanted orchardists to have the protection we would want if we were in the orchardists' place.

Many of the stations accepted our offer, including the Pullman, Wash., and Corvallis, Oregon, Stations, and their tests proved its merit to be superior to the home-made lime and sulphur or the lime-sulphur-salt wash, and proved it to be all we claimed for it.

Now comes "imitators," and we respectfully submit the following for orchardists' consideration: Before ever making a car of it, before even having their "plant" erected, imitators have gone out among orchardists and business men taking orders assuring them their stuff was or "is to be" just as good as "Rex."

IMPORTANT: If you buy any of the "imitation" stuff, for your own protection, get in black and white a signed written guarantee that their stuff is to be equal in every way to Rex Lime and Sulphur Solution, or no pay. You are entitled to that protection and should have it. That guarantee will not make the "imitation" stuff as good as "Rex" but it will give you recourse which you should have, if you take the chance and use it.

We have had four "imitators" in the Middle-West States; one in Iowa, one in Nebraska, one in Colorado and one in Missouri, and we can refer orchardists to places where the "imitation" stuff can be purchased for $1.00 a barrel or less, the purchasers of it having found it to be very inferior stuff, practically no two barrels of it alike, and for the further very good reason that it was bought on a positive guarantee that it was "to be" equal in every way to "Rex." The purchasers found it inferior stuff. United States Inspectors sent samples of it to the Department of Agriculture at Washington, D. C., for analysis and got positive proof that it was not equal to Rex, and the U. S. Department of Agriculture ordered that it must not be used, because of its variation and uncertain quality.

Rex Lime and Sulphur Solution is uniform. A positive guarantee is on every barrel. The U. S. Department of Agriculture at Washington, D. C., makes frequent analyses of it, and because of its being uniform and perfect and always alike, all U. S. Government Sheep and Cattle Inspectors have been instructed from Washington, D. C., to permit the use of Rex Lime and Sulphur Solution for the official dipping of both cattle and sheep.

The U. S. DEPARTMENT OF THE INTERIOR purchased $559.00 worth of it for use on one of the Indian Reservations. Purchased it without any solicitation from us. No stronger endorsement could be given for any preparation, for the Department of Agriculture has records of results obtained from all dips used, and in buying "Rex" in preference to any other, they have given "Rex" the strongest endorsement that could be given to any preparation. NO OTHER READY-MADE LIME AND SULPHUR SOLUTION IN THE PACIFIC COAST STATES HAS UNITED STATES GOVERNMENT RECOGNITION OR APPROVAL. THIS IS IMPORTANT.

Years ago we voluntarily went before officials in the Department of Agriculture at Washington, D. C., and requested of them that they place upon us the requirement that every barrel or every gallon of our Preparation must stand the same tests or could not be used. They were surprised because of knowing the difficulty in getting a uniform solution, as sulphur is one of the hardest things to get into solution, and any little variation in process or method of mixing, boiling, etc., etc., and variations in quality of lime, quality of sulphur, etc., would make a decided variation in the resulting preparation. They were very willing to do this, however, in order to protect the Department against the product being cheapened after receiving U. S. Government approval, and they appreciated our voluntarily coming to them asking for such a requirement or restriction to be placed upon the ready-made product. Our object was to protect ourselves and protect users against "cheap" imitations, for our Solution is and always will be made upon honor.

We have heard that "imitators" have sent samples of Rex Lime and Sulphur Solution to State Experiment Stations for analysis, claiming it to be their own make, and in order to APPARENTLY prove theirs to be as good as "Rex."

During the winter of 1905 and 1906 considerable quantities, several carloads, of Rex Lime and Sulphur Solution was used by orchardists and Experiment Stations of Oregon, Washington and Idaho, and it is quite generally known by fruit growers that it has given the best of results and satisfaction, and is as cheap or cheaper than the home-made, crude preparation, and on account of its being uniform, free from sediment, easy to use, easy on spray pumps, hose and nozzles, and requiring no boiling, no heating, etc., we were prevailed upon to build a plant on the Pacific Coast for its manufacture in order to get it to the people at the lowest possible expense.

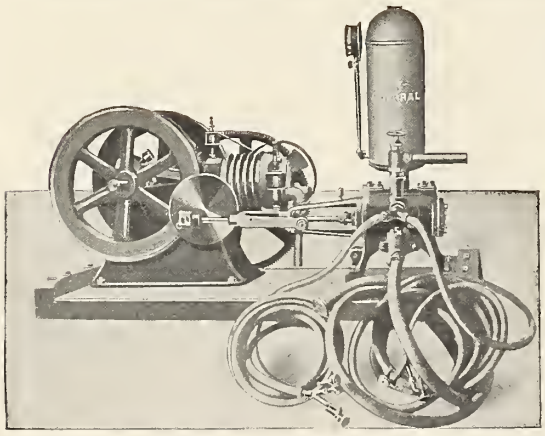
We have established at Benicia, Calif., the most complete plant ever erected for the manufacture of Lime and Sulphur Solution, and we are now shipping from that point; and to our surprise we now find that some of the very same people (not orchardists) who urged us to build a plant on the Coast are offering for sale to orchardists the "imitation" stuff, knowing full well that they don't know whether they will be giving customers value received or doing them a positive injury. We feel that orchardists are entitled to the information given above and we desire to express our very sincere appreciation for the patronage already given for Rex Lime and Sulphur Solution. Each user of Rex Lime and Sulphur Solution can depend on its being uniform and perfect in every way, and our positive guarantee will be pasted on every barrel. You KNOW what Rex Lime and Sulphur Solution will do. Is it not advisable for you to use the original, tested and reliable Rex Lime and Sulphur Solution?

We have just published a twenty-page leaflet giving valuable information. They are free for the asking. Write us for it if you want one.

For the present Portland Seed Company of Portland, Oregon, have a contract with us as our distributing agents for Oregon and Washington. Send them your orders. In another issue of this paper we shall explain more about Lime and Sulphur Solution.

Pacific Coast Office and Factory, BENICIA, CALIFORNIA.
Home Office and Factory, OMAHA, NEBRASKA. *Factory No.* 2, EAST OMAHA, NEBRASKA.

THE REX COMPANY



PORTLAND SEED CO.'S
Power Spray Outfit

AIR COOLED GAS ENGINE

COMPACT VERY POWERFUL LARGE CAPACITY

Portland Seed Co.'s Power Sprayer is by far the best on the market. The pump is very powerful and well made, yet low priced. All valves which are in a separate valve box are brass and easily reached without removing the air chamber. Suction can be taken from either side. The outfit is of sufficient capacity for two to four leads of hose, each lead having as many nozzles as desired. We selected the AIR-COOLED ENGINE after a careful test, and consider it the *best*. The outfit is fitted with pressure gauge and relief valve. A rapidly revolving fan cools the cylinder; no water required, making less weight and no freezing in cold weather. Engine is extremely simple —anyone can run it, and when not being used for spraying can be detached and used for a variety of purposes about a farm. One to two gallons of gasoline per day will run the engine continuously.

The following Descriptive Catalogs free on request: Spray and Spray Pump Catalog, No. 205; New 1907, 100 page Complete Seed Annual, No. 201; 52 page Catalog of Nursery Stocks, Roses, Shrubs, Etc., No. 202. Ask for books wanted, by number.

We are headquarters for all Sprays for winter or summer, and handle the best Lime and Sulphur Solution; also Oil Spray, Scalecide, Arsenate of Lead, Disparene, Etc.

PORTLAND SEED COMPANY PORTLAND, OREGON SPOKANE, WASHINGTON